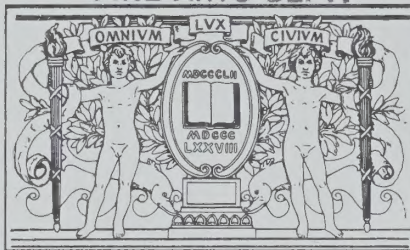
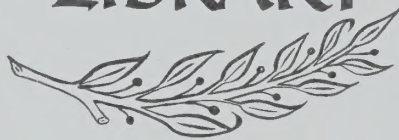


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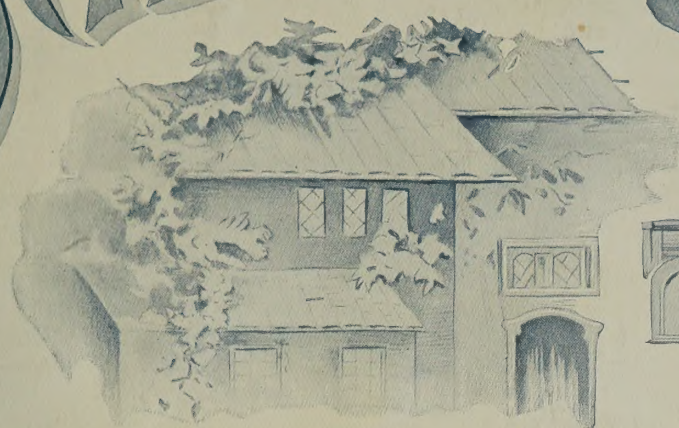


SCIENTIFIC AMERICAN

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Building Monthly.



MRS. A. CASS CANFIELD'S HOUSE, ROSLYN, N. Y.

5911

No. 231

JANUARY, 1905

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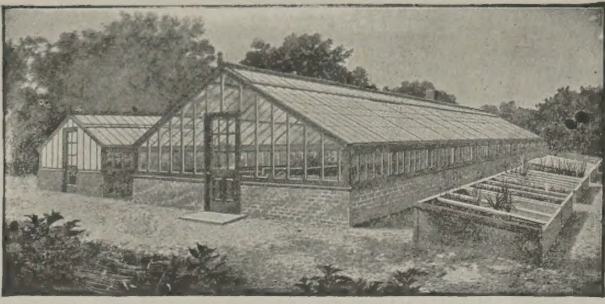
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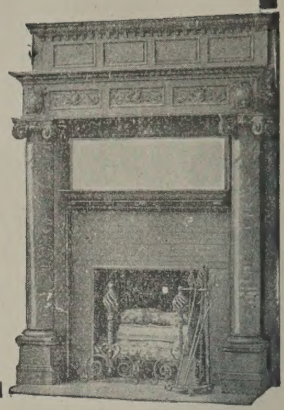
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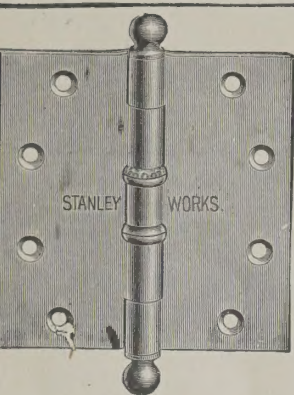
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THE HALL.

MRS. A. CASS CANFIELD'S HOUSE, ROSLYN, N. Y.—See page 3.
MESSRS. McKIM, MEAD & WHITE, ARCHITECTS.

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*The engravings presented in this issue are made from photographs taken specially for the SCIENTIFIC AMERICAN BUILDING MONTHLY.

MONTHLY COMMENT.

THE BUILDING MONTHLY begins its new year with the first instalment of the brilliant program promised in the December number. Mr. Barr Ferree describes with some detail the splendid house belonging to Mrs. A. Cass Canfield, at Roslyn, N. Y., a house interesting not only as the work of one of our most distinguished firms of architects—Messrs. McKim, Mead & White—but more especially as a study in pure brick construction, almost completely wanting in ornamental detail. It shows in a most unusual manner how impressive a house may be that is well designed in the material of which it is constructed, and which depends on that material alone for esthetic effect. The first article in the new monthly series on "Help to Home Building" is presented in a paper, dealing, in a general way, with some of the factors every builder in prospect should equip himself with before undertaking the erection of a home. These articles have been prepared from a new and original point of view, and each number will be found of great practical value and interest. In the Departments, the first portion of the "Fifty Suggestions for the House" is printed.

NEWPORT and its doings are matters of never failing interest. The cultured foreigner, who is well introduced, is apt to see more of our summer capital than the American who makes it a hasty visit. Moreover, he is generally allowed the privilege of writing down and publishing his impressions, and this he often does with engaging frankness. One of the latest visitors was M. Pierre Veber, who writes most interestingly of some Newport experiences. There is in the United States, he writes, a curious little corner. Within an area of a few hundred square yards are grouped villas, sumptuous houses, and châteaux, and each of these buildings belongs to a very rich owner. The poorest is many times a millionaire. That tiny corner is Newport. When you read an account of the magnificent

fêtes given there you imagine a big watering-place like the English seaside resorts, with palaces and fine hotels climbing an amphitheatre of hills. Newport shows nothing of that sort. The beach is quite a small one and confined to outlying rocks. There is no monster hotel, and the baths are enclosed in a kind of wooden château fort. The life which they lead at Newport has little in common with our daily life at a watering-place. There is no bathing hour there, no visiting hours, no tent and chatter of the gossips. One stays very little at the edge of the sea; the dallying in the antique shops is pretty nearly unknown. As for excursions, we speak of them only for a reference. Where would you make an excursion from the place? The daily life is more restricted, and, so to speak, passed more within doors than with us. There are house to house receptions. The pleasure, no doubt, is of the best quality, because society is not so mixed. In its aspect Newport recalls Neuilly, in the neighborhood of the Bois de Boulogne. Handsome dwellings, surrounded with small gardens, border wide, straight avenues. The paths are necessarily short. There are not quite two miles for a carriage drive. When that is ended you must go over it again. But the dwellings are of an excessive and ill-assorted richness. Every style is to be seen side by side. There is a Pompeian house close beside a Scandinavian chalet, two paces from a Venetian structure of four stories. In all the place there is little noise; the avenues are empty. Sometimes a carriage passes at a fast trot, an automobile spins by in a whirlwind of dust, then everything relapses into that rather tedious calm which affects the life of Newport.

HELP TO HOME BUILDING.

THE FIRST OF A SERIES OF TWELVE PAPERS.

WHAT THE HOUSE BUILDER SHOULD KNOW.

THE building of a house is an undertaking that calls for the widest knowledge and the utmost patience. It is quite impossible to set a limit to either of these indispensables. The building of a house is an enterprise that, in most cases, is desired to be proceeded with at the utmost speed. The pros and cons may have been considered for many months; the probable cost, the situation, the style, the material, may have been debated without end; but once the work has been determined upon, it must be pushed to completion as rapidly as possible, without delays and without annoyances. As delays are almost certain, as annoyances are unavoidable, and as the work, in any event, would take longer time than it was supposed it would take, the necessity for the largest amount of patience is apparent. The impatient man has no business at all to undertake the erection of a house for his own use, and he is hardly less happy in undertaking it for investment. In the former case he will want to move in at once; in the latter he will inevitably want to begin to draw money on the cash invested in the enterprise.

Patience is, therefore, an indispensable commodity in house building, and all sorts of patience will be required. The most unexpected things are bound to happen. The stupidest annoyances will come up at the most inconvenient times. One difficulty adjusted only opens the way to fresh troubles. And then the bills! Many houses, of course, are erected within the limits of cost originally set for them; but happy is the man whose bill of extras does not give him a cold shudder.

As a means of acquiring knowledge, the building of a house holds a high rank. No one emerges from the operation without a broader knowledge of materials and men than he ever thought to possess. And the saddest feature of this wisdom is that no sooner is it acquired than it ceases to have value. Very few people build more than one house for their own use, and hence the knowledge gained with so much toil, care, and pain has no value for future effort.

Many of the annoyances that attend house building would be avoided if the knowledge acquired during the process had been possessed at the beginning. Many persons will doubtless wish they had employed another architect, or proceeded without any architect whatever. A more foolish thing than the latter could hardly be done. It is the business of the architect to design and to build; he exists for no other reason. He has made a study of the many problems that enter into house building; and even if his studies be slight and superficial, the sum total of his knowledge will be vastly in excess of that of any layman. As for the other architect, that is another proposition. Architects are but human beings with failings like their employers; one may seem to be less satisfactory than another; the difficulties that are accentuated with one man may be different from the tribulations that are especially pressing with another. The client who is markedly dissatisfied with his architect is quite likely to experience an equal amount of dissatisfaction with another.

The first step in house building, therefore, is to know what to do; and the easiest solution is to employ the

most capable architect one can reach. In an off-hand way the architect will probably inform his client, after ascertaining his views in a general way, that he had better take a trip to Europe and return to find his new home completed and ready for occupancy. This is the ideal theoretical way of building a house, and it has so many advantages over any other way that it is a pity it is not oftener followed. It saves trouble to both architect and client; and has but a single drawback; namely, that the only thoroughly satisfied person in the transaction is the architect; and he has neither to live in the house nor assume full responsibility for it.

The relations of the client and the owner are, of course, very different. The architect is employed by the owner to perform certain tasks for him. What these tasks are the client has no definite knowledge of. He at once looks upon his architect as his hired man and as a superior sort of being capable of performing the most difficult tasks. He will demand the most preposterous things and insist on impossible conditions. He will want so many closets—to cite a favorite example—that there will scarce be room to sleep and live in the house. He will require, in a house of moderate cost, all the appliances and equipments that characterize houses of large price. And he will utterly fail to understand why he can not get \$2.00 worth of results for an expenditure of 50 cents.

It will add greatly to the ease with which the house is built if the client will take the trouble to ascertain, at the beginning, just what he can get for so much money. This is something very different from desiring a bay window like Mr. A's, a porch like Mr. B's, a permanent ice chest like Mr. C's, and so on through the list. Every one of these features may have real and positive merits and be most desirable in themselves and in combination with the house under construction; but every feature in a house costs money; it is quite impossible to get either materials or labor without funds, and generally without paying the highest market prices.

Notwithstanding the differences that are frequently apparent between estimates and actual cost, the value of the former is very real and very considerable. No one should frown upon an estimate because he has known of many that have fallen far short of the reality. Estimates are the guides and finger posts to building, and they are of value and of importance, even though they be general in a very broad way. They involve two essentials: first, they establish the general notion of cost; and, secondly, they form a standard which, if departed from in any way, means an increased cost. It is possible, of course, that the total cost may be lessened; but the occasions when this will occur are so very few that it may be regarded as axiomatic that any change means more money.

These conditions in house building are so elementary that it would hardly be necessary to refer to them did they not involve things that come up invariably in every building enterprise, and quite as invariably create astonishment in the minds of the builders. The untried man, plunging into building with the ardor born of inexperience, is very sure he will escape the pitfalls that annoyed his neighbor and depleted his bank account. Yet the very same things, or a new version of them, will certainly happen to him, and the astonishment he will feel will create no surprise among those who have been through the mill.

A most important fact to be borne in mind in building enterprises is that the unexpected is bound to happen. The building of even a modest house is an enterprise that is concerned with many persons. Skilled and unskilled labor of very varying kinds must be employed; a multitude of manufactured products must be used; and their uses and values thoroughly understood. The building of a house can not proceed on a time table basis nor run as an express train. It is not until the last workman has been dismissed and the final bills paid that the owner can enter upon his own. He will be a wise man if he takes what he has got and not wish for something different.

The house builder should familiarize himself with everything that concerns the erection of buildings before he embarks in this complicated undertaking. He can never know too much, and the very vastest knowledge will, after the work has been done, seem small and unimportant compared to that gained through the bitter experience of reality. The more time consumed in such preliminary studies the better it will be. The whole matter may be briefly summarized:

1. Find out what can be done for so much money.
2. Determine to be content with a certain expenditure or be prepared to meet unknown bills.
3. Study the problems of house building as thoroughly as possible.
4. Remember your architect knows more of the subject than you do.
5. Do not be rash in fixing on a date for moving in.
6. Prepare for the unexpected.
7. Arrange for unlimited credit with the bank of patience.

NOTABLE AMERICAN HOUSES*

BY BARR FERREE.

MRS. A. CASS CANFIELD'S HOUSE, ROSLYN, N. Y.

A wild country road forms the driveway from the station at Roslyn to Mrs. Canfield's house. It is built on a knoll, its back looming up in the distance far above the road, which skirts a great open field below it. The entrance to the house grounds is marked by a modest brick gateway. A beautiful private road begins within it, bordered on each side by fresh young grass—for the place is very new—beyond which superb forest trees raise their straight boles to a great height. A sharp turn reveals the house, a building of vast size, all of brick, red, with spots of black, a stately spreading front, so pleasantly envired as to seem to be just the sort of house one might naturally look for in this lovely country.

The house is well inland, with no water view, which

closed with the rigid fencing of the rich nor covered with their well kept lawns. One expects a pleasant house in such surroundings, and Mrs. Canfield's is that, and more; it is altogether charming.

The house consists of a large central building, three stories in height, to which, on either side, are joined wings, two stories high. Its proportions are magnificent, for the front is of great length, and the greater height of the center adds very materially to the majestic effect. The single note of ornament is the main doorway—pilasters supporting a broken curved pediment. It is, therefore, a front whose esthetic effect is very largely dependent on its dimensions, and these are so generous and so good, and so well handled, as to give at once a distinction wholly its own. Even the window openings are plainly bricked over with only a small stone keystone for emphasis, and, save narrow slabs of stone let in between the windows to mark the floor lines, there is no other note of ornament

The entrance hall is rectangular; it is white, with pilasters on the wall immediately in the center, on which hangs a superb tapestry; rare old light standards are fastened on either side. On each side of the entrance door is a recess lighted by a window. To the right is a separate hall containing the main stairway, and then, beyond a tapestried curtain, is the guest wing, the whole of the right wing, both on this floor and the floor above, being given up to guest rooms. Just within it, on the left, is a sitting-room for the joint use of the men, for whom the first floor is intended. It is a pleasant little room in green. The bedrooms, on both floors, are charming, and beautifully furnished; the walls are paneled and covered with fabrics of delicate colors. They are arranged in suites, with their attendant bathrooms, and one or two have a special servant's room attached. A separate stairway to the upper floor, and a separate entrance on to the main front, render this wing entirely



THE SUN PARLOR—RESIDENCE OF A. B. WALLACE, ESQ., SPRINGFIELD, MASS.—See page 18.

is such a general accompaniment of Long Island houses. But the country is very fine, rolling hills of green and gentle woods, with a quite pronounced sense of space, rare enough in Long Island views, which are so often bounded by the ocean or the Sound. There is a touch of wildness in the scene as well, for much of the near-by land is farming land, not yet en-

below the cornice, which, both in the center and in the wings, is surmounted by a balustrade. The factors which make up a front would seem, therefore, in this case, to be of the slightest; yet as a matter of fact the utmost skill has been displayed in their disposition; the masses of the building have been so well composed, the proportions are so fine, the spacing of the windows so clever, and the ornamental features—the doorway and the balustrade—have been so admirably used, that it is, as a whole, a front of quite penetrating attractiveness.

A spacious platform, paved with brick and reached by stone steps, to which bay trees in great pottery jars give a pleasant note of color, forms the approach to the main doorway. The drive broadens out just before the steps, and looking back one realizes anew the beautiful situation of the house. Straight before one is the entrance road, with the high forest trees standing aloof from it, as if it were that the house might be the better seen and their own wooded grandeur the more observed. It is wonderfully peaceful and serene here, a true beauty spot, to which, it is but just to say, the house is thoroughly fitted.

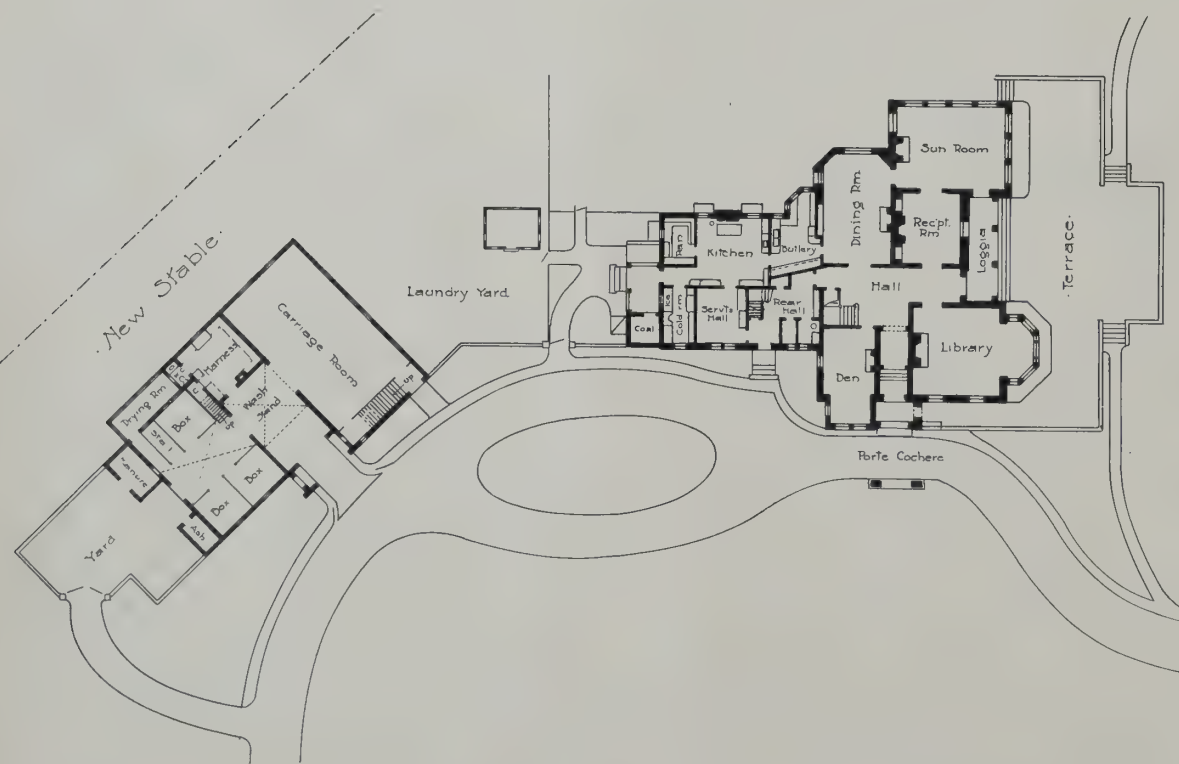
independent of the other parts of the house, from which, if need be, it can be wholly cut off.

The wing to the left is arranged in a similar manner, and, with its own entrance and stairs, can be similarly isolated. This part of the house is especially given up to the children, with a children's dining-room on the first floor, which is intended for use when the house is crowded with guests. Beyond it are the kitchen, the pantries, serving rooms, servants' hall, and other service apartments. The upper floor is the children's floor, the bedrooms on the sunny side of the corridor, the bathrooms on the opposite side. Large rooms, cheerful colors, pleasant furniture, and quite individual treatment in each case are the characteristics of these attractive apartments. The servants, it may be added, have sleeping rooms on the third floor of the main building.

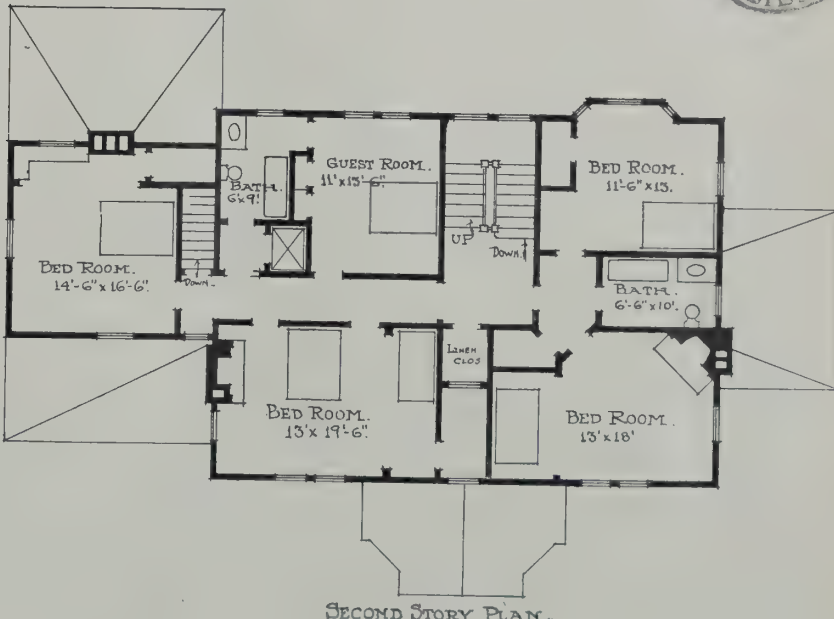
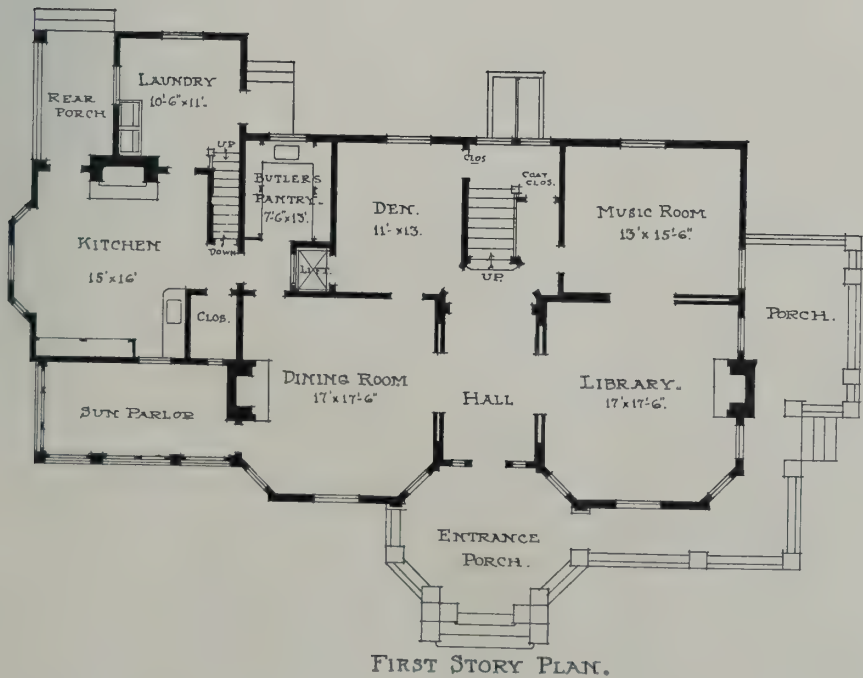
The chief rooms of the house are contained on the south front of the central building. They are three in number, and include the library, the drawing-room, or living-room, and the dining-room. The living-room fills the entire central space, the other two opening

(Concluded on page 16.)

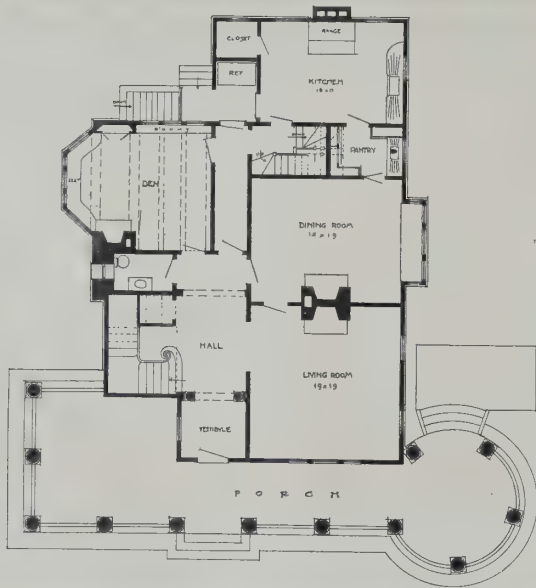
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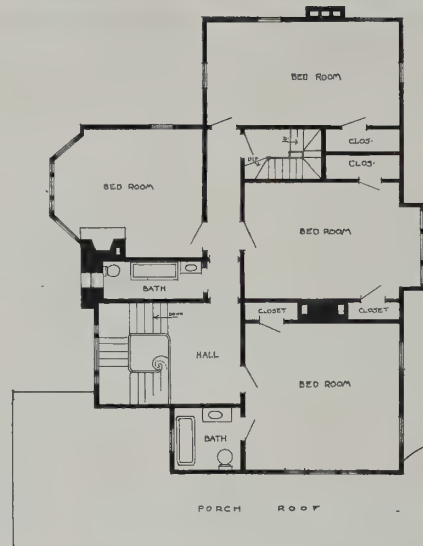
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MR. EDWIN J. PARLETT, ARCHITECT.



RESIDENCE OF MRS. CHARLES C. EMOTT, MORRISTOWN, N. J.—See page 20.
MR. OSCAR B. SMITH, JR., ARCHITECT.



First Floor.

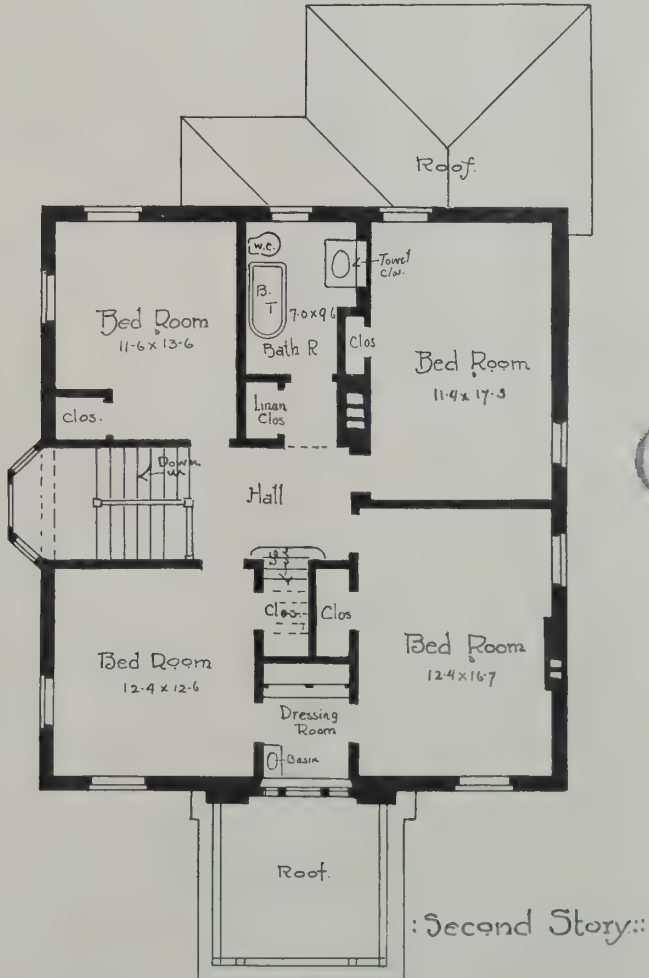
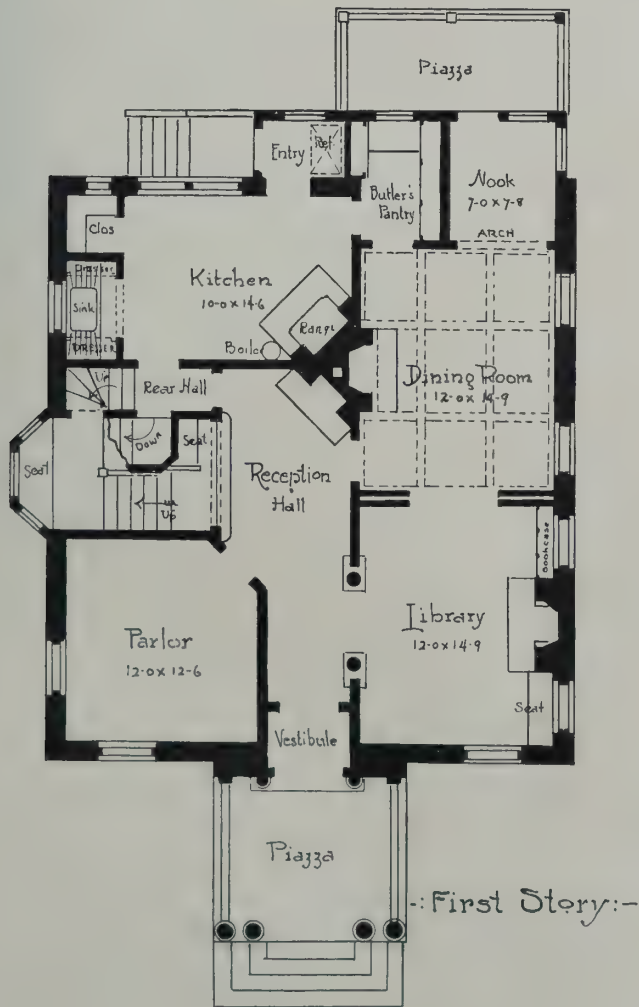


Second Floor.



A HOUSE AT PASSAIC, N. J.—See page 19.





A BRICK HOUSE AT NEWARK, N. J.—See page 20.
MR. WILLIAM D. JONES, ARCHITECT.



THE MAIN STAIRWAY.



THE TERRACE.

MRS. A. CASS CANFIELD'S HOUSE, ROSLYN, N. Y.—See page 3.

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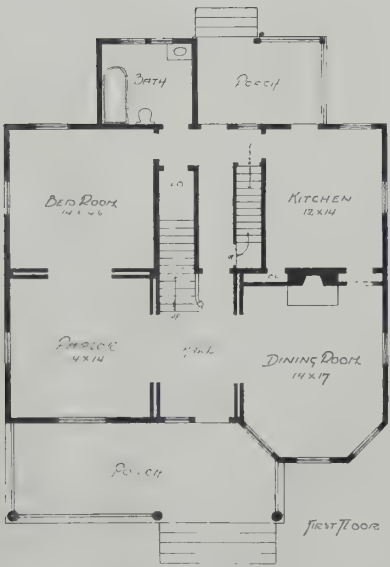
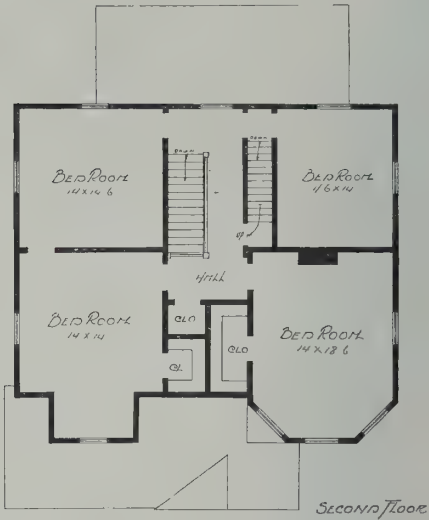


THE LIVING-ROOM.

MRS. A. CASS CANFIELD'S HOUSE, ROSLYN, N. Y.—See page 3.

MESSRS. McKIM, MEAD & WHITE, ARCHITECTS.

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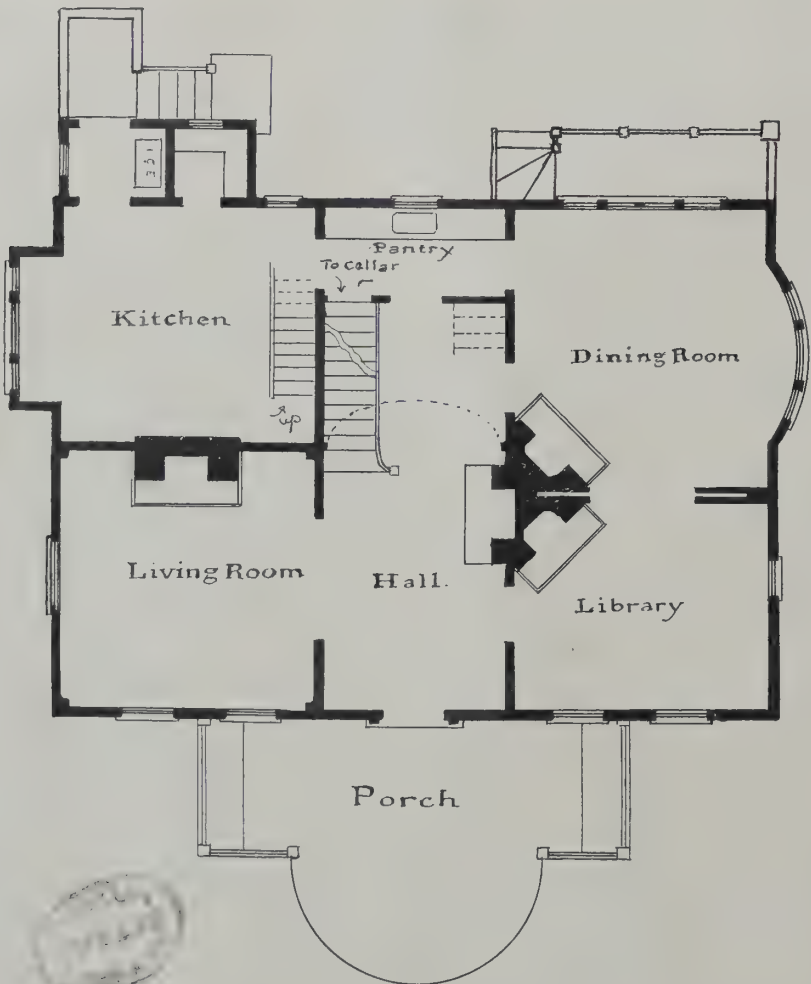


A HOUSE AT MORRISONVILLE, ILL.—See page 19.
MR. HERBERT C. CHIVERS, ARCHITECT.

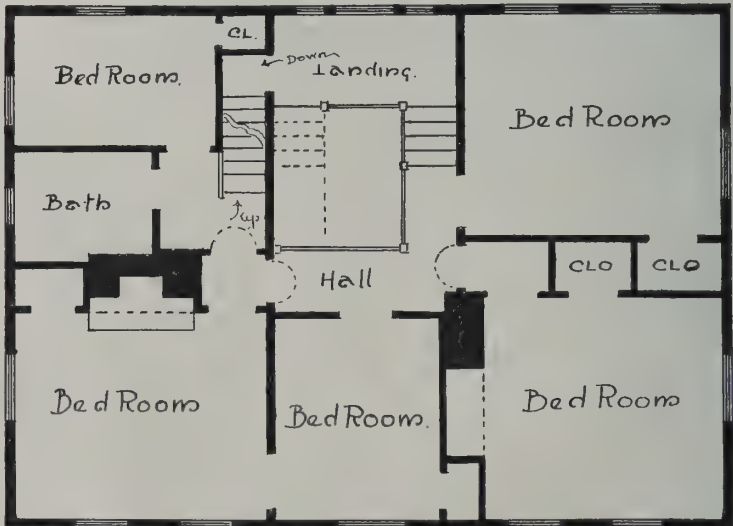


MODERN COLONIAL DOORWAYS.—See page 16.





First-Story Plan



Second-Story Plan

"SILVERGATE," A COTTAGE AT SUMMIT, N. J.—See page 20.
MR. JOY WHEELER DOW, ARCHITECT.



AN ARTISTIC BAY WINDOW.



THE HALL.

"SILVERGATE," A COTTAGE AT SUMMIT, N. J.—See page 20.
MR. JOY WHEELER DOW, ARCHITECT.



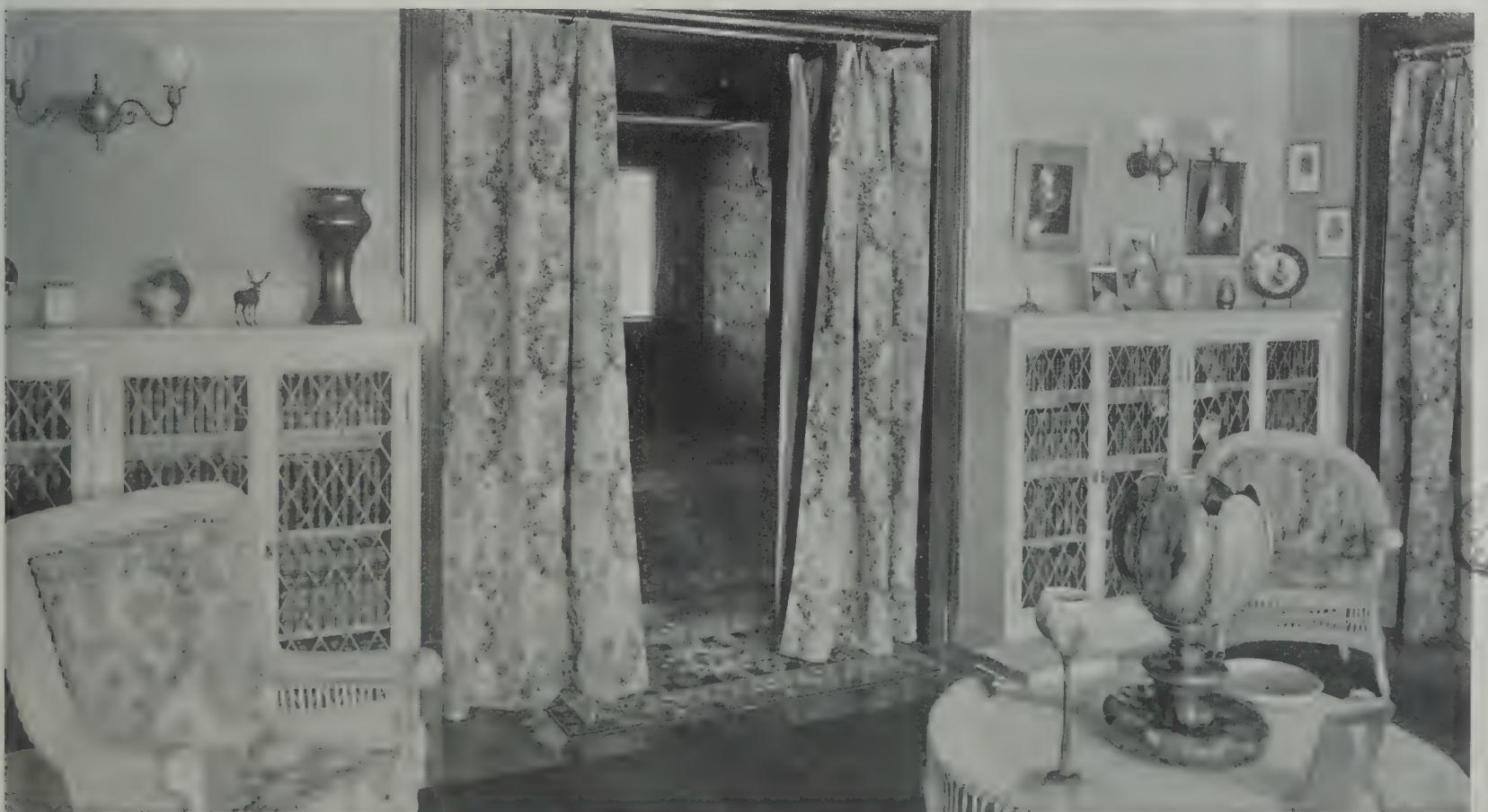
THE STABLE.

RESIDENCE OF E. A. MORRISON, JR., ESQ., ARDSLEY-ON-THE-HUDSON, N. Y.—See page 16.

MR. A. J. MANNING, ARCHITECT.



LIVING-ROOM.



THE LIBRARY.



PORCH STEPS.—See page 18.

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RESIDENCE OF A. B. WALLACE, ESQ., SPRINGFIELD, MASS.

On pages 3, 4, and 18 are views showing the residence and stable of A. B. Wallace, Esq., at Springfield, Mass. A loggia is formed at the main entrance, between the sun-room and the drawing-room, and the carriage entrance was created at the side of the house. The main hall was extended back to the rear line of the main building, and a broad staircase built. On the outside, the stucco is formed of rough-cast cement of a warm light gray. The red colored tile roof is in harmony with the color scheme of the building. The red stone trimmings of the building were followed for the terrace, which is entirely of stone.

The woodwork in the hall is of dark fumigated oak, and the walls above the paneled wainscoting are hung with Holliston cloth and then stenciled. A broad Elizabethan staircase rises from this hall to the second story and is lighted by a dome over head. The re-

windows have Venetian blinds of the same color as the other woodwork.

The dining-room is treated with a Colonial effect, with white enamel trim and mahogany doors. The walls above the high base are covered with a foliated paper in dark red and brown coloring. The ceiling is beamed, and treated the same as the trim. The fireplaces have Italian marble facings and hearths, and mantels to correspond with the treatment of each room. The butler's pantry is fitted with cases for china in the usual manner, and is well appointed with plate warmers, drain sinks, and refrigerators. The kitchen walls are treated with white enamel tile and Keene's cement. Great care has been given the working department throughout to insure cleanliness of arrangement. The rear hall, servants' hall, cold storage room, etc., are furnished complete.

The two front bedrooms on the second floor are trimmed with mahogany, and the walls are hung with

lated, and has a stairway leading up to the second story, containing the recreation quarters, with the walls of red brick and the roof timbers stained a moss green. The stable contains three boxed stalls and one single stall, fitted with the best ornamental iron fixtures and sanitary stall basins. The drying-room is enclosed with glass, and the stable yard forms a useful feature of the plan. The harness-room has a dresser, and harness cases with sliding glass doors, which are fitted up with the best modern harness hooks.

Mr. Edwin J. Parlett, architect, Carr Building, Springfield, Mass.

PORCH STEPS.

THE relationship of the porch steps to the immediate surroundings is a much more important matter than may, at first thought, be supposed to be the case. This is particularly so when the steps rise directly from a lawn, instead of from the more usual path. Such steps



THE STABLE—ESTATE OF A. B. WALLACE, ESQ., SPRINGFIELD, MASS.—See page 3.

ception-room is treated in a dainty and artistic manner. The woodwork is painted a cream white, and above the low wainscot the walls are hung with a striped yellow paper. The library is trimmed with old cherry, and the walls are hung with a handmade green-striped fiber paper. Bookcases are built in on either side of the fireplace, and a wide paneled seat follows the inside of the bay window.

The den is stained a dark green. Low bookcases extend around the sides of the room, above which the walls are hung with a plain Japanese leather, richly stenciled.

The sun-room is entirely new and is properly named, for the sun is in the room during the entire day. The walls from floor to ceiling are lined with oak of dark color, which is tinged with greens. This woodwork rests on a high base of green marble. The floor is of a dark imported green tile. The ceiling is heavily beamed, forming plaster spaces, which are treated in a strong Eastern effect. Indian lanterns are in use for the fixtures, and the hangings at the doors are of silk rugs in the same general style. The

Holliston cloth, stenciled. The other bedrooms are treated with white enamel trim and papered walls. There are six bedrooms, nursery, two large dressing-rooms, four bathrooms, linen closet, etc., on the second floor. The bathrooms have white enameled tiled floors and wainscotings, and porcelain fixtures and exposed nickel-plated plumbing. The servants' rooms and bathroom are located in the third story wing; the billiard-room and chambers are located in the main house. The laundry, cold storage room, furnace room, fuel bins, etc., are located in the cellar, which extends under the entire house.

The stable, which is also shown in the photograph and in the plan, is built and constructed the same and in harmony with the house. A high wall at the rear of the house and connecting with the stable screens the kitchen and laundry yards. The walls of the interior are built of enameled brick in light colors. The floor is cemented; the second story floor beams are exposed to view and form a beamed effect. The beams are stained a dark brown, and the panels are painted light yellow. The carriage-room is well lighted and venti-

require, almost of necessity, the addition of foliage. Two examples of these steps are shown in the illustrations on page 17. In both, shrubs are planted almost up to the steps, but the vases and tubs with which each flight is decorated give agreeable notes of color, and permit the use of delicate ornamental plants in immediate juxtaposition to the dwelling. Both these steps are pleasant examples of garden planting.

THE DECAY OF STONE.

PROF. A. H. CHURCH, an English authority, suggests the use of baryta water for preventing decay in stone. A solution of hydrate of baryta repeatedly applied in dry, warm weather, with suitable precautions, scarcely changes the color of the surface, forms no skin, penetrates deeply, and serves to render solid once more disintegrated stone, where the damage has been wrought by the formation of sulphate of lime, by turning this soluble compound into insoluble sulphate of baryta, at the same time setting free caustic lime, which in course of time becomes carbonated into chalk.



A BRIDE'S NEW HOME.

A CERTAIN man in town, says a New York paper, is fitting up a delightful nest for his bride-to-be. She is coming from Europe to marry him, as he simply can not go abroad and leave his lusty, thriving, but fledgling business. The new home is a cottage on Long Island, and its charming, effective, and inexpensive furnishings are as follows: The hall is hung with a green and white trellis paper, and moss-green velvet pile carpet will be laid over the matting. The drawing-room walls (distempered white) are divided into panels by a lovely rose border, the carpet is the same moss-green velvet pile, and white alpaca curtains, with inner ones of clear muslin, are held back with rose silk bows—smart, upstanding bows! Chairs and sofa have loose covers of chintz—clusters of crimson and pink roses tied with blue ribbon, on a white ground—and the cushions are all of plain silk—some rose pink, some pale green, and some with muslin covers.

Two or three gilt wicker baskets to hold plants, some pieces of Queen Anne silver, and old English china will give "homy" finishing touches.

The dining-room will be even simpler in effect. Everything is to be white and green. White walls, paneled out with green paper moldings, white curtains tied back with green silk, moss green carpet, and chair covers of white and green chintz. It is countrified and charming.

Pale blue, pink, and green ribbon borders will outline the various white walled bedrooms, and spotted muslin curtains and bedspreads will in each room have colored ribbons to match, slipped through their wide hems. The floors will be bare and covered with denim rugs, as they are clean and sweet and easily washed, and in the verandas and in every corner of the house there will be plenty of those delightful lounging chairs, with book pockets and leg rests for lazy visitors.

NEW STYLES IN INTERIOR FURNISHINGS.

To see gorgeously frescoed walls and ceilings, says a New York decorator, one must now go to the hotels and restaurants, to club-houses, and public buildings. With few exceptions they will not be found in the homes of the New Yorkers who set the fashion. The proprietors of hotels are not striving after quiet effects by any means. And they are right. The great mass of the traveling public are better pleased to have magnificent effects when they pay big prices. They expect them, in fact. But here in contrast to that I may cite Mrs. B——'s drawing-room, which has a long expanse of perfectly plain ceiling, rounding down to meet a four-inch molding of white and gold; the walls between a two-foot high wainscoting of white enameled wood and the frieze are paneled with yellow self-toned satin brocade; the chairs and sofas are upholstered in yellow brocade of exactly the same tint, and portières and window-curtains are made of the same material. The frames of the furniture are white enameled. This is the general style of drawing-room most in vogue now. Plain ivory-tinted ceilings devoid of ornamentation are practically the rule.

The very wide, elaborate frieze has gone out. There are no vivid contrasts of color in wall-hangings or furniture-coverings. The self-toned room—that is, the room where everything is of the one color—has the lead in the best houses below the bedroom floors. Two or three kinds of furniture of as many different colors jumbled up in the same drawing-room are out of the question now.

In dining-rooms, libraries, and billiard-rooms the growing popularity of plain effects is perhaps even more noticeable than in drawing-rooms. For instance, I fitted up a library not long ago for a millionaire, almost entirely in green velvet. The ceiling was perfectly plain, tinted a pale café-au-lait shade; the walls were upholstered in green velvet; the portières and curtains were also of velvet; the floor was covered with a plain green velvet carpet. There was not a flower pattern nor a conventional design of any sort in sight. There were some quaint, high-backed Gothic seats and some comfortable lounging-chairs in the room, the upholstery of which was also green. His billiard-room was almost austere, although artistic. The walls were paneled with plain brown leather, the wainscoting was of dark oak, and there were brown leather chairs, and a rug of the same shade, woven to match, almost covered the floor. The hangings were of brown plush. Among the more artistic and less wealthy, as well as among the very opulent, the dining-room, fitted with a beamed ceiling of Flemish or English oak or Circassian walnut or

ordinary walnut, with a four-foot wainscoting to match, has the preference.

In the newer private dining-rooms in New York the side-board, serving-table, and china closet all match the woodwork of the room. Consequently there is complete harmony. Harmony is the main idea rather than that there shall be several thousand dollars' worth of covering in evidence. The showy, gilt window-cornices, mirror-frames, and curtain supporters, once so fashionable, have disappeared. Lace curtains have gone, too. Only the panel curtain hanging straight down against the glass is now used in rooms of state, with the heavy curtains of brocade, tapestry, or velvet, as the case may be, next the room. As a result of fashion's change in favor of simpler and quieter effects in house-furnishings, it is now quite possible for people in very moderate circumstances to duplicate in comparatively inexpensive materials some of the costliest rooms in New York. And they do. One sees this every day in the studios of professional people who have the advantage of visiting, from time to time, the first-class houses.

A HOUSE AT PASSAIC, N. J.

The illustrations shown on page 6 present the residence of Benjamin Q. Ward, Esq., at Passaic, N. J. The materials are rubble stone for the underpinning and shingles for the walls and roof. The effect in perspective of the south side of the house, and the arrangement of the twin-gables with a bay window between, is unconventionally good, while, on the other side, a large stair window of a type seldom seen and a large brick chimney of generous proportions are interesting features. The shingles on the walls have been stained a deep buff, the trim and columns are light cream, the blinds olive green, and roof a deep green.

The interior contains a large vestibule, separated from the hall proper by an archway, supported by Ionic columns and pilasters. The hall has a white painted trim, and contains a Colonial staircase with mahogany rail and a very successful well hole. The lavatory is conveniently located. The living-room is Colonial in its treatment, with white painted trim and old rose colored wall paper, and it also has an open fireplace furnished with tiled facings and hearth and a mantel with columns, mirror, etc.

The dining-room has a three foot wainscoting and a large bay window, with a shelf for plants. The color scheme for the wood staining and wall covering is olive green in different shades. It has an open fireplace, furnished similar to the one in the living-room.

The den is finished in Flemish oak, and the walls are covered with crimson burlap. It has a wainscoting, a beamed ceiling, bookcases built in, paneled seat, and an open fireplace. The windows are glazed with bull's-eye leaded glass, and the furnishings are rich in color and have a distinct character. The butler's pantry is fitted with drawers, dressers, and bowl. The kitchen and its dependencies are furnished with all the best modern conveniences. The lobby contains ample space for the ice-box.

The second floor contains four bedrooms, with ample closets, and two bathrooms. The trim is of white enamel throughout, and the bathrooms are furnished with porcelain fixtures and exposed nickel-plated plumbing. There are three servants' bedrooms and ample storage space on the third floor. A cemented cellar contains a laundry, furnace-room, fuel-room, etc.

A HOUSE AT MORRISONVILLE, ILL.

The illustrations shown on page 10 present the house of Mrs. H. H. Herdman, at Morrisonville, Ill. The underpinning is built of brick, laid in white mortar. The first story is covered with clapboards, and the second story is covered with shingles, the whole being painted and stained in a harmony of colors. The first story is painted yellow with white trimmings, and the second and third stories are stained with a yellowish gray with similar trimmings. The roof is covered with shingles and stained a deep red. The plan of this house shows a central hall, and it differs from the average house in its location of the main bedroom, which is connected with a bathroom placed on the first floor. This bathroom serves as a first story lavatory, and at the same time, by means of the rear stairs, it is accessible to the chambers on the second floor. The interior finish is of cypress throughout, and the stains are flat in tone, and are appropriate. The hall contains an ornamental staircase. To the left is the parlor, at the rear of which is placed the bedroom. The dining-room has an open fireplace, built of brick, with the hearth and facings of the same, and a mantel of Colonial style. The kitchen and its dependencies are furnished with the best modern improvements. The bathroom is wainscoted and is fitted up complete. The second story contains four bedrooms, and the third contains the servant quarters and ample storage space. A cemented cellar contains a furnace, laundry, fuel rooms, etc. Mr. Herbert C. Chivers, architect, St. Louis, Mo.



THE GARDEN MONTH BY MONTH.—JANUARY.

JANUARY is a dull month for the garden lover. The work is wholly within doors, and is chiefly limited to the care of plants, and an occasional glance at the roots placed to dry in the cellar. There is so little to do, in fact, that the very dearth of work is apt to provoke neglect. But plants carried through the winter must not be neglected, even in this quiet season, or there will be heavy penalty to pay later on which it will be impossible to remedy.

Periods of actual growth and bloom are, of course, the fascinating season for the garden; but the less active months are full of necessary work, the necessity for which keeps the interest alive. January is the season for watchfulness and care. Remove all dead leaves; turn the plants that are developing too much toward the light so they will grow in a symmetrical fashion; pinch off parts that seem to promise undue development for the same end; give little water, but do not let the plants dry out. Hanging plants may, with profit, be dipped in water from time to time and left to absorb all they will take; they always need more water than those in pots. Sunshine should be abundantly allowed; and if all the plants can not receive an equal share their position should be changed from time to time so that each one may get the largest amount. Roots in the cellar should be carefully watched. Cannas and dahlias should not be watered, and are best preserved under the cover of dry soil or sand. If the canna roots are attacked with mold the diseased parts should be cut off and the wound dried with charcoal. Look out for pests, which are often active at this season, and which should be kept down at all costs. Plants touched with frost may be restored by standing them in a cool room and sprinkling them with cold water; heat should never be applied as a frost corrective. Tender plants rarely recover from severe frosts.

A NOVEL SUMMER HOUSE.

A NOVEL summer house is described in an English paper. It is built of roofing tile and cement, and is circular in plan, covered with a low, flattish dome. The base is of concrete, and the walls above are constructed of nothing but a double layer of ordinary roofing tiles, finished to a total thickness of one inch, the two tiles being floated together in neat cement and laid so as to break every joint in a vertical direction. One strand of fencing wire placed between the layers of tiles and carried round near the top of the walls is the only additional material or support used in the whole structure. Even the concrete seat and sloping tile back are unnecessary for its stability, as these were erected much later than the other portions of the work. The main flat ribs or panels of the dome, three tiles wide, were first turned across in a regular order, the same center being used for each. The remaining spandrel pieces were then filled in on rough boards, which were struck when the work had properly set. The external ribs (also of tiles bedded in cement) were added to act as stiffeners to the dome, and also to facilitate the climbing of creepers over its surface. The dome is rendered externally in cement, and four small squares of glass admit light to those portions of the interior farthest removed from the entrances. The result is described as a happy combination of elegance and strength, forming a cool and airy retreat from the summer sun or rain, placed invitingly across one of the many shady paths leading from the designer's residence.

MASSED FOLIAGE.

BEFORE planting shrubberies (or lawns) do not, says H. A. Caparn in Park and Cemetery, omit to cultivate the ground as well and deep as possible. A good crop of bushes or grass can not be raised on poor soil any more than another crop. When planted the making of the shrubbery is only begun. It is intended to be of a certain form and texture, to produce a certain effect from the salient points of view. It is usually desired to be higher on one side than on the other, on the back than on the front, and generally speaking, that each bush should grow taller than the one in front of it, for if it did not, it could not be seen; that is, if the shrubbery is not set where it can be looked down upon. Each bush should be a well-shaped specimen of its kind, vigorous and individual, yet a part of the whole. There must be no gaps or untidy places, nothing protruding disproportionately from the general expanse.

"SILVERGATE," A COTTAGE AT SUMMIT, N. J.

On pages 12 and 13 will be found illustrations of "Silvergate," a cottage at Summit, New Jersey. The underpinning is built of rock faced blue stone. The superstructure of wood is covered on the exterior with matched sheathing, and is then covered with long pine shingles, 2 feet in length, which are laid at a gauge of 9 inches to the weather. The whole is painted three coats of marine white lead. The attractive porch at the front and the artistic bay window at the side form two happy features. The whole is crowned with a roof of shingle, and its form, while unusual in modern houses, was a very uncommon type in Colonial times.

The interior of the first story is trimmed with white wood, which is painted white with a sufficient quantity of glue in the finishing coat. The floors are double, the finished upper floor being of quartered oak. The stairway has oak treads and risers, white painted balusters, and a mahogany rail. The fireplace is built of brick, with the facings and hearth of the same, and a quaint Colonial mantel. There is a heavy molded chair rail which forms a low Colonial wainscoting. The ceiling has a heavy molded cornice. To the left of the hall is the living-room, containing an open fireplace and a Colonial mantel.

The library and dining-room are separated from each other by sliding doors, and have open fireplaces built of brick and furnished with Colonial mantels. The dining-room has a low Colonial wainscoting, and a modern cornice; the library also has a similar cornice. The butler's pantry is fitted up with all the necessary fixtures, drawers, cupboards, sink. The kitchen and its dependencies are fitted up complete. The lobby is large enough to admit ice-box.

The second story is finished the same as the first story, except that the upper flooring is of comb-grained North Carolina pine, and there is no cornice or wainscoting. The ceilings are finished with a picture molding. This floor contains five bedrooms, and a bathroom; the latter is wainscoted and furnished with porcelain fixtures and exposed nickelplated plumbing. There are three good sized bedrooms on the third floor, besides ample storage room and trunk room. A cemented cellar contains a laundry, heating apparatus, cold storage room, fuel rooms, etc.

Mr. Joy Wheeler Dow, architect, Wyoming, N. J.

A BRICK HOUSE AT NEWARK, N. J.

THE brick house which is illustrated on page 7 has been built for Frederick A. Phelps, Esq., at Clinton Avenue, Newark, N. J. The walls are built of pressed Jersey brick laid in Flemish bond with black headers. The quoins are of white brick, and the porch and cornice of wood are painted white. The roof is covered with shingles and is finished natural.

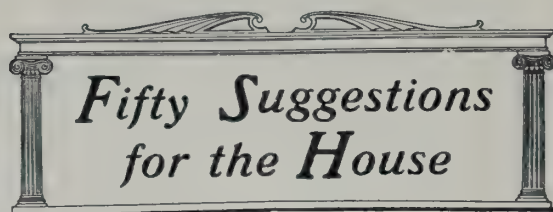
The hall, parlor, library and dining-room are trimmed with quartered oak. The walls in the hall are divided into panels to the height of the door trim and are finished with a plate-rack; the panels are filled in with crimson burlap. The staircase, of oak, starts from a broad landing, on which there is a seat, and from which the stairs rise to a second landing, which is provided with a paneled seat in a bay window, glazed with delicate tinted glass, all leaded lights. The open fireplace has a tiled hearth and facings and a mantel of oak. The parlor is treated in harmony and in an artistic manner.

The library is separated from the hall with columns placed on paneled bases, and contains an open fireplace built of dark brown speckled Roman brick, with the facings and a hearth of the same, and a mantel. On one side of the fireplace there are bookcases built in, and on the other side a seat, over both of which there are placed windows. The walls are covered with apple green burlap.

The dining-room has a paneled wainscoting of oak six feet in height and ceiling beams. The woodwork in dining-room is stained bog-oak, and the walls above the wainscoting are covered with dark red burlap. The fireplace has high tiled facings and a mantel-shelf; the hearth is also of similar tile. The nook off the drawing-room forms an attractive den, or breakfast-room. The butler's pantry is fitted with sink, drawers and cupboards. The kitchen has coal and gas range, solid porcelain sink, and nickelplated sink fittings, store closet, dresser, and a lobby large enough to admit of ice-box.

The second floor contains four bedrooms, bathroom, dressing room, all of which are treated in white paint. The bathroom has a tiled floor and wainscoting, and is fitted up with porcelain fixtures, and exposed nickel-plated plumbing. A medicine closet, with mirror in the door, is placed over the lavatory. The linen closet, with drawers and shelves, is conveniently located. There are three good sized bedrooms, and a trunk-room on the third floor. A cemented cellar contains a laundry, heating apparatus, and a cold storage room.

Mr. William D. Jones, architect, 245 Broadway, New York.



Fifty Suggestions for the House

1. THE INGLE-NOOK.

THE ingle had two main uses: the first was to protect a wide open fire from the cross drafts arising from badly fitting or open doors, shutters and windows; the second was to afford sheltered seats near the fire, where the aged and feeble could rest and any one could keep warm in cold or rough weather. Incidentally, no doubt, our forefathers appreciated the value of contrasts, the charm of the ruddy firelit space glowing red in the gray ill-lighted building, and the coziness of the sheltered low recess in the wide and lofty hall. To obtain this charm, as is often done, by forming an ingle so small that one can not sit in it comfortably, is merely to remove the fire farther from the room; while on the other hand, to arrange a large ingle, as is also sometimes done, with a modern tiled register stove set in a chimney breast is to lose the feeling of sitting on the hearth, and the charm that springs from the fire being able to cast its glow all over the recess. The ingle adapted to modern use, and justifying the space it occupies in rooms of modern size, must be large enough to be comfortable for one to sit in regularly, a place where one can live, not merely sit to be roasted. The fire must be so designed as to have something of the feeling of the old fire on the hearth, and must not be cut off from the recess. It is generally well to make the whole recess into the hearth. The ingle must be protected from cross drafts. Fenders are to be avoided.—Barry Parker and Raymond Unwin.

2. THE HOME MEDICINE CLOSET.

SOMETHING to hold medicines and simple household remedies is of paramount importance in bathrooms, especially to those attached to guest rooms, and still more especially when those guest rooms belong to country cottages. Guests, taken ill during the night, may be reluctant to disturb a family. One of the cleverest of housekeepers and the most considerate of hostesses gave me a list of things which she keeps in hers—camphor, Pond's extract, quinine, Jamaica ginger, mustard plasters, whisky, brandy, camphorated vaseline, absorbent cotton, a new toothbrush, and a new spool of dentist's silk, a spirit lamp, alcohol, and smelling salts. On the shelf above the washstand she has listerine, lait d'iris, a toilet powder and tooth wash, besides some preparation for chapped hands.—Lillie Hamilton French.

3. THE LOCATION OF THE FURNACE.

As a general rule the furnace should be located in the basement, near the center of the space occupied by the registers, and a little nearer the side from which the prevailing winds come in winter. The tendency in hot-air heating, when the wind is blowing strong in severe cold weather, is for the rooms on the farther side of the house from the wind to be overheated, while those against the wind are poorly heated, the registers on the windward side delivering almost no hot air. The height of the basement should be such that the "leaders" or horizontal hot air pipes below the basement ceiling may have a pitch of one and a half inches per running foot upward from the furnace. If there is no inclination to these pipes the first story rooms will be heated with difficulty. For a residence of ten rooms the furnace room should have a clear height of at least seven feet six inches.—Frank E. Kidder.

4. FLOOR VENTILATION.

THE ventilation of the space under floors is always necessary where there is a space between the floor boards and the ceiling, and when a wooden floor is placed over the concrete or other foundation laid on the ground; otherwise dry-rot will set in, and the floor timbers gradually rots away and perishes. This ventilation is effected by means of perforated iron gratings or air-bricks built into the outer walls, and so arranged that cross ventilation is produced.—B. F. and H. P. Fletcher.

5. COLORS FOR MANTEL DRAPERY.

IN choosing a color for mantel drapery that of the wall and of the hangings must be taken into consideration. If, with dark walls and a black marble fireplace, a light color is introduced, the effect is that of a light streak breaking the line of the wall. Then the decoration becomes too obvious, and loses such little quality as it might have been made to possess. It is better to build up from the lower or the floor color, making the covering as inconspicuous as possible.—Lillie Hamilton French.

RESIDENCE OF MRS. CHARLES C. EMOTT, MORRISTOWN, N. J.

THE residence illustrated on page 5 was erected for Mrs. Emott, at Morristown, N. J. It is built of brick and stucco. The underpinning is built of red brick laid in white mortar. The superstructure is covered with stucco of a grayish white color, and the trimmings are painted an ivory white and the blinds bottle green. The whole is crowned with a dull red shingled roof.

The trim throughout the interior is of birch in the first story, cypress in the second, and North Carolina pine in the third, with hardwood floors throughout. The hall is a central one, and contains an ornamental staircase. To the right of the entrance is the library, provided with a tiled fireplace and carved mantel and bookcases built in, beyond which there is the music-room. To the left is the dining-room, which also contains an open fireplace with tiled trimmings and mantel. The sun-parlor, which opens from the dining-room and which is inclosed with glass, is an attractive feature of the house. The large kitchen is provided with a bay window, which is quite an unusual feature, fireplace for range, dresser, sink, storecloset, etc. The laundry and rear porch are conveniently located.

The second story contains five bedrooms and two bathrooms, the latter wainscoted with tiles and furnished with porcelain fixtures and exposed nickelplated plumbing. The third floor contains three bedrooms and bath. A cemented cellar contains a furnace, fuel rooms, cold storage, etc.

Mr. Oscar B. Smith, Jr., architect, associated with Ludlow & Valentine, No. 1 East Twenty-seventh Street, New York.

THE OUTLOOK FOR MODERN ARCHITECTURE.

MR JOHN BELCHER, the new president of the Royal Institute of British Architects, in his recent annual presidential address, took a hopeful view of the future of architecture. Those who were inclined to regard it as a dead art, he said, were already awake to the fact that there were more vitality and advance being exhibited in England than elsewhere. It was not to be thought, however, that their friendly critics had not been discriminating. "A man," said Ruskin, "may hide himself from you in every other way, but he can not in his work—there you have him"; and our critics had had us, sometimes, to our confusion of face before them.

Architecture must tell its tale; it had its message to deliver. Like a musical score it expressed a great deal more than met the eye. Its meaning was hidden behind the veil of outward symbol. It was the prose of inarticulate but beautiful thought and feeling. It recounted the past, recorded the present, and held up ideals for the future. But only when it was enriched from the sister arts of sculpture and painting could it tell the tale with fulness of eloquence and power—for then it spoke to the heart in tender and solemn tones of all that was most grand and beautiful in life and humanity.

It was a pleasure to see that much had been done in recent years to cement and confirm the alliance of the arts. The brotherly readiness of the sculptor to aid in the good cause should be recognized, and his name coupled with the architect's in all such work. And when the painter's art was called in, then, like the vibrating strings with their soul-stirring chords, the refinements of tone and color appealed to the heart with a new and higher power, based upon the primal sympathies and emotions of the human breast.

Why, then, had these arts so few opportunities of joint action? Was it not because architecture had forgotten her place and lagged behind? Was she not like Lot's wife? Looking back, there lay the explanation.

The sister arts of painting and sculpture had been the while advancing, but architecture had stopped short and been content to look back to the past, to draw upon old periods and reproduce "defunct" styles, so that the living arts of the present age could no longer associate with one that was a mere moldering survival from bygone times.

But all this, he believed, would soon be past history, a vanished nightmare, for a new era had undoubtedly begun. After all, the great thing was not so much where we were standing as in what direction we were moving. Let us be enthusiasts. Our national architecture was not dead; the spark was there; blow upon it and the fire would burn. Let them encourage and stimulate the energies of those who, with the love of their art burning brightly, sought not arrogantly for something new, but to advance that which they had proudly inherited and to make its influence for good ever more and more known and loved.

THERE are in the United States at the present time about fifty sand-lime brick plants, with a total capacity of approximately 1,000,000 bricks a day. Experience shows that sand-lime bricks can usually be manufactured at a cost below that of common clay bricks. When, however, sand-lime brick is desired equal to the fine clay front brick, the cost of production naturally is increased beyond that of common clay bricks.

New Building Patents

The following list of New Patents relating to Building and Sanitary Science is prepared expressly for the SCIENTIFIC AMERICAN BUILDING MONTHLY by MUNN & Co., Solicitors of American and Foreign Patents.

A PRINTED COPY of the specification and drawing of any patent in this list, or any patent in print issued since 1863, will be furnished from this office for 10 cents, if exact date or number is furnished. Remit to MUNN & Co., 361 Broadway, New York.

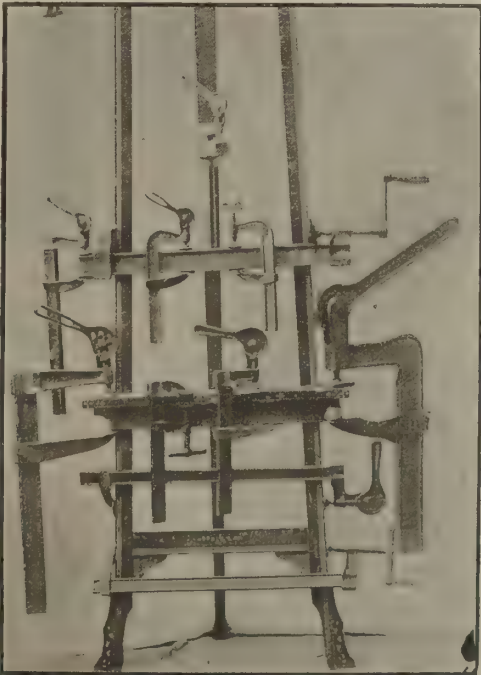
BRICK, STONE, AND TILE.		
BUILDING BLOCK. J. Schall, Evergreen Park, Ill. November 1	773,899	
BUILDING BLOCK. S. O. Hawkinson, Chicago, Ill. November 8	774,174	
BUILDING OR PAVING BLOCK. W. H. Reiff, Philadelphia, Pa. November 8	774,276	
ILLUMINATING TILE. P. H. Jackson, San Francisco, Cal. November 8	774,390	
BUILDING BLOCK. P. Dierlamm, Stratford, Canada. November 15	774,835	
ILLUMINATING TILE CONSTRUCTION. P. H. Jackson, San Francisco, Cal. November 22	775,626	
PAVING BRICK. A. F. Knobloch, Detroit, Mich. November 22	775,905	
BUILDING BLOCK MOLD. I. L. Landes, Chicago, Ill. November 29	775,980	
PERFORATED RADIAL BRICK. D. D. Elder, Jr., New York, N. Y. November 29	776,127	
BUILDING BLOCK. A. C. Mather, Chicago, Ill. November 29	776,409	
ARTIFICIAL BUILDING MATERIAL. A. Seigle, Lyon-Monplaisir, France. November 29	776,480	
TILE, BRICK, OR THE LIKE. S. Veyon, East Palestine, Ohio. November 29	776,441	
ARTIFICIAL GRANITE. L. A. Garshey, Paris, France. November 29	776,460	
CARPENTRY.		
WEATHER STRIP. W. H. Taylor, Denver, Col. November 1	773,689	
WEATHER BOARDING APPARATUS. W. Spear, Tyler, Texas. November 1	774,114	
DOOR, GATE, OR LIKE STRUCTURE. W. R. and R. Pitt, New Rochelle, N. Y. November 8	774,493	
WEATHER STRIP. J. E. Scott, Louisville, Ky. November 8	774,702	
WINDOW. W. B. Culver, Carbondale, Pa. November 22	557,522	
WINDOW SASH. C. M. Rhodes, Steubenville, Ohio. November 22	775,858	
WINDOW. A. G. Steinbremer, St. Louis, Mo. November 22	775,866	
WINDOW. H. C. George, Philadelphia, Pa. November 29	776,177	
WEATHER STRIP FOR DOORS. T. H. Duncombe, Cleveland, Ohio. November 29	776,226	
WINDOW. E. C. Luks, Reading, Pa. November 29	776,477	
CONSTRUCTION.		
WALL CONSTRUCTION. F. E. Kidder, Denver, Col. November 1	773,647	
SHEET LATHING FOR BUILDINGS. J. D. O'Brien, St. Louis, Mo. November 1	773,886	
CHIMNEY BASE PROTECTOR. G. W. Lewis, Carlisle, Iowa. November 8	774,258	
BUILDING CONSTRUCTION. J. Wills, New York, N. Y. November 8	774,545	
METALLIC SHINGLE. C. L. Darnall, Floyd, Va. November 15	774,740	
MANTELPiece WAINSCOTING FREE PLATE OR SLAB FOR COVERING WALLS, CEILINGS, OR THE LIKE. D. Röhm, Nuremberg, Germany. November 15	774,783	
BINDING DEVICE FOR COLUMNS AND OTHER ARTICLES. J. W. Hartmann, Mt. Vernon, N. Y. November 22	775,351	
WOOD COLUMN. J. W. Hartmann, Mt. Vernon, N. Y. November 22	775,365	
COLUMN. R. Hegener, Chicago, Ill. November 22	775,489	
APPARATUS FOR MOLDING CONCRETE WALLS. Shute and Henschen, Indianapolis, Ind. November 22	775,685	
METALLIC WINDOW FRAME AND SASH. J. Bogenberger, Milwaukee, Wis. November 22	775,668	
BUILDING STRUCTURE. L. P. Hazen, Cincinnati, Ohio. November 22	775,703	
METALLIC SLIDING WINDOW. C. E. Erickson, Chicago, Ill. November 29	775,915	
CONSTRUCTION OF FALSE BEAMS, INTERIOR CORNICES, OR THE LIKE. W. Nielson, New York, N. Y. November 29	776,344	
ELEVATORS.		
ROPE GEARING FOR ELEVATORS. C. I. Hall, San Francisco, Cal. November 1	773,736	
AUTOMATIC STOP FOR ELEVATORS. F. E. Hackmann, St. Louis, Mo. November 15	774,751	
ELEVATOR SAFETY STOP. Robinson and Casey, Mokenlumne Hill, Cal. November 22	775,608	
DOOR CONTROLLING DEVICE. A. D. Caywood, Chicago, Ill. November 29	776,294	
FIREPROOFING AND FIRE EXTINGUISHMENT.		
FIRE EXTINGUISHING APPARATUS. Nuhring and Thompson, Norwood, Ohio. November 1	773,971	
APPARATUS FOR PROTECTING THE AUDIENCE PARTS OF ROOMS. B. A. Stevens, Toledo, Ohio. November 1	774,002	
FIREPROOF PAINT OR COATING. E. R. Stowell, Portland, Ind. November 1	774,003	
AUTOMATIC FIRE EXTINGUISHING DEVICE. J. Galvin, Brattleboro, Vt. November 8	774,352	
AUTOMATIC FIRE ALARM. J. W. Griffin, Pawtucket, R. I. November 8	774,385	
FIREPROOF CONSTRUCTION FOR FLOORS, CEILINGS, ETC. A. Forrester, Cleveland, Ohio. November 8	774,512	
FIREPROOF FLOORING. D. W. Boyd, Chicago, Ill. November 22	775,516	
FIREPROOF COVERING FOR COLUMNS OR PILLARS. S. Gollick, Jersey City, N. J. November 22	775,562	
FIRE SHIELD FOR PROSCENIUM ARCH OPENINGS OF THEATRES. H. M. Smith, Richmond, Va. November 22	775,865	
FLAT FIREPROOF FLOORING CONSTRUCTION, WITH IRON BEAMS CONNECTING THE CARRYING WALLS. W. Kohlmetz, Frankfurt, Germany. November 29	776,071	
FIREPROOF SHUTTER SYSTEM. W. L. D'Olier, Philadelphia, Pa. November 29	776,225	
FIREPROOF WINDOW. I. N. Price, Salem, Ohio. November 29	776,349	
HARDWARE.		
HINGE. Craver and Gillette, Belvidere, Ill. November 1	773,717	
COMBINED STOP AND LOCK FOR WINDOW SASHES. R. L. Riley, Newburgh, N. Y. November 1	773,986	
SASH FASTENER. C. G. Seaman, Spokane, Wash. November 8	774,206	
SASH LOCK. P. J. Hogan, Cincinnati, Ohio. November 8	774,471	
WINDOW SASH HOLDER. G. G. Stone, Lakeland, Ky. November 8	774,613	
LOCK. H. Birkedal, Stavanger, Norway. November 15	774,823	
LOCK. B. Phelps, Seattle, Wash. November 15	774,970	
AUTOMATIC WINDOW CLOSER. H. C. Smith, Elizabeth, N. J. November 15	774,854, 774,855, 775,046	

SASH LOCK. J. R. Cronin, Grand Rapids, Mich. November 15	775,127
WINDOW OR DOOR FASTENER. C. D. Lovelace, Omaha, Neb. November 15	775,180
WINDOW SASH LOCK. J. C. Deggin, Cleveland, Ohio. November 22	775,524
AUTOMATIC WINDOW CLOSER. H. C. Smith, New York, N. Y. November 22	775,547
SASH FASTENER AND LIFT. W. W. Bauman, Morton, Ohio. November 22	775,593
SASH LOCK. C. Hearnshaw, Chicago, Ill. November 22	775,602
SASH FASTENER. J. H. Clements, Coperas Cove, Texas. November 22	775,744
LATCH. G. Levy, Königsberg, Germany. November 29	776,073
DETACHABLE SPRING HINGE. J. D. Swack, New Brighton, Pa. November 29	776,153
SCREWLESS DOOR KNOB. H. G. Voight, New Britain, Conn. November 29	776,276
ALARM LOCK. G. A. Moser, Westgrove, Pa. November 29	776,341
DOOR FASTENING DEVICE. C. H. Ballamy, Philadelphia, Pa. November 29	776,378
HEATING AND VENTILATION.	
HEATING AND VENTILATING BUILDINGS. I. S. McDougall, Manchester, England. November 1	773,668
FIREPLACE. M. F. Frechtling, Hamilton, Ohio. November 1	773,863
VENTILATOR. W. Edwards, Milford, England. November 1	774,053
HEAT RADIATOR AND VENTILATOR. J. J. Keelage, St. Louis, Mo. November 22	775,333
WINDOW VENTILATOR. A. W. Chase, Grand Rapids, Mich. November 22	775,798
MISCELLANEOUS.	
BURGLAR ALARM SYSTEM. H. D. Stroud, Chicago, Ill. November 8	774,342
COVERING FOR WALLS OR LIKE SURFACES. L. G. Mutterer, Hamburg, Germany. November 15	774,890
SOOT COLLECTOR FOR CHIMNEYS. C. Frangemeier, Munster, Germany. November 22	775,500
FLEXIBLE ROOFING OR FLOORING. L. C. Rugen, Boundbrook, N. J. November 22	775,635
WEATHERPROOF CEILING. L. C. Rugen, Boundbrook, N. J. November 22	775,636
PAINT COMPOSITION. W. A. Hall, Bellows Falls, Vt. November 29	775,919
SHEATHING FOR ROOFS. T. F. Odell, Nyack, N. Y. November 29	776,198
PLUMBING.	
BOILER STAND. C. G. Ettie, St. Louis, Mo. November 1	773,555
TRAP AND WASTE OUTLET FOR SET TUBS, ETC. J. Holmes, Boston, Mass. November 1	773,569
HYDROSPHON VALVE FOR WATER HEATERS. J. A. Stevenson, Newcastle, Pa. November 1	773,687
CATCH BASIN FOR SINK OUTLETS. H. Robischon, Utica, N. Y. November 8	774,201
FLUSHING TANK. H. J. Luff, Cleveland, Ohio. November 15	774,766
WATER CLOSET. E. L. Dezendorf, New York, N. Y. November 15	775,029
SHOWER BATH APPARATUS. C. E. Wallen, Minneapolis, Minn. November 29	776,209
WATER CLOSET. P. J. Madden, Chicago, Ill. November 29	776,408
TOOLS.	
COMBINED SQUARE AND PLUMB BOB. A. K. Shoop, Manorville, Pa. November 1	773,996
FLOORING CLAMP. E. F. Rosier, W. Granby, Conn. November 15	775,092
FLOOR JACK. C. M. Millican, Grapevine, Texas. November 15	775,146
PLANE. J. Muehl, Cleveland, Ohio. November 22	775,378
CARPENTERS' DEVICE. H. F. Volberding, Dike, Iowa. November 29	776,277

Publishers' Department

QUICK ACTING CLAMPS.

THE Colt's celebrated series of quick acting clamps are manufactured by the Batavia Clamp Company, of Batavia, New York. They are adapted for use in all the trades, and this firm's claim that the quick adjusting, self-locking, eccentric lever and adjustable screw clamps of its make are a predominant efficiency in the

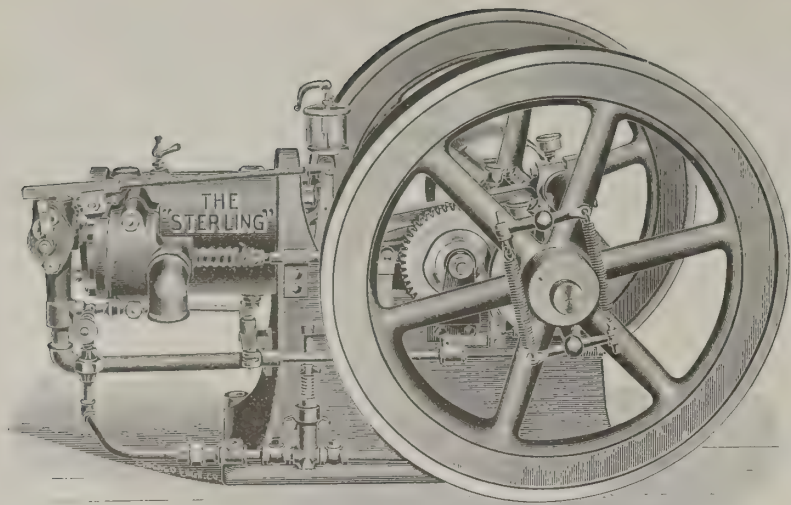


DISPLAY OF CLAMPS.

the liability of displacing the work occasioned by turning a slow working screw. These clamps have been in use extensively for twenty years in the various trades, including piano makers, boat builders, cabinet makers, and mechanics, and whenever improvements are needed the most careful ingenuity of mechanical culture is at hand in the inventive genius of Mr. Colt, the patentee of these strong grip devices. The illustration given herewith shows a display of clamps, prominent in the kinds mentioned above. One of the best is the U bar clamps, made of Bessemer steel plate pressed into U form while cold, which process stiffens the bar. It has a fixed head supporting an eccentric lever, and a movable jaw which has a strong fixed tongue pressing on the back of the U bar, making a broad, strong grip. The lever gives instant action and the tongue holds the jaw so firmly that continued jarring will not loosen the clamp. The U shape greatly increases the strength of the bar, and the U bar will be used in most of the Colt clamps when desired. A device especially adapted to veneering, paneling, and all work requiring a long, broad jaw is called the "Universal Clamp." It has a double flanged steel bar, with a fixed head supporting an eccentric lever, which operates an adjustable jaw hung on a pivot in the center, and a hinge at one end enabling it to adjust itself to a beveled as well as a level surface. The improved movable jaw has ribs inside the opening, pressing on the front and back of the bar, and two lugs pressing on the inside of the flanges of the bar, and the adjustment is such that the movable jaw slides easily on the bar. Place the adjustable jaw against the work; move the other jaw against the work; raise the lever and the movable jaw is instantly set. Having a double grip, by means of the ribs and lugs, on the flanged bar, the work is held so firmly that blows of a hammer will not loosen the clamp. The next engraving represents a manufacturers' and builders' steel bar vise clamp, and is of special interest to the makers of sash, doors, and blinds, and highly recommended to all manufacturers of wood requiring the use of a strong clamp for wide work. The flanged steel bar has a fixed head supporting a strong crank steel screw operating a vise jaw and the improved movable jaw. Place the vise jaw against the work; slide the movable jaw against the work. There is no slack to take up, as in case of notches or holes, which also weaken the bar. The jaw is held firmly by its compound grip. Placing the face of the clamp on the work prevents springing or buckling under extreme pressure. The list of these quick acting devices includes the improved Eccentric Lever Clamp; Colt's Cabinet-makers' and Builders' Steel Bar Clamp, Eccentric and Screw; Colt's Cabinet-makers' and Builders' Steel Bar Clamp, Eccentric or Screw; the Finishing Clamp; the Car and Piano Clamp; the Carpenters' and Builders' Long Arm Clamp; and the Short Reach Clamp. The "Short Reach" has the steel U bar, short, fixed head supporting eccentric lever operating an automatic button, and with a movable jaw. It is especially adapted to table, chair, and all wide work of two inches thickness or less. The company also manufactures Colt's Wagon and Automobile Jack and Colt's Steel Bar Wagon Jack. The latter has a decided advantage in the ease and convenience with which the lever is operated, particularly under a low down wagon. Unlike all other jacks, the lever is raised to a locking point, thereby getting a better purchase than by the downward movement. With the adjustable rest raised and automatically locked under the axle and the lever brought forward, the wheel of the wagon is thus easily lifted. Its capacity is one thousand pounds. Colt's clamps are made in more than thirty different styles, combine the advantages learned in nearly a quarter of a century of practical clamp making, and we are pleased to say that there are no industrial signs that point to a delimitation of their sphere of influence.

GAS AND GASOLINE ENGINES.

THE demand for small sizes of a reliable engine that can be purchased at a low price is met by a new type of horizontal apparatus shown in the accompanying wood engraving. While the construction and fine proportions are clearly shown, we may add that the material and workmanship are known to be perfectly substantial. The journals are babbitted with a special metal designed for the purpose, and ample provision is made for taking up all ordinary wear. The cylinder of these gas and gasoline engines is a separate piece from the bed, so that if anything happens it may be replaced at small cost. The majority of small engines now on the market are made with cylinder and bed in one casting, so that in case of the necessity of a new cylinder



GAS AND GASOLINE ENGINE.

the user finds that he has to purchase both bed and cylinder. The heads are cast upon the cylinder, so that there are no joints with their packing to contend with. The exhaust valve is water jacketed, which considerably increases the life of the valve and overcomes the trouble that all non-water jacketed exhaust valves are liable to. The pumping gear is connected direct to the pinion on the crankshaft, the ratio being 9 to 1. It has 6, 8, 10, and 12 inch strokes, and will run a pump to raise ten gallons of water three hundred feet, twenty gallons one hundred and fifty feet, etc. The pumper has water tank and connections, the tank not furnished with any of the outfits, unless specially ordered. An oil-cooling device is an additional fixture, and supplied if desired. The spark is controlled by the governor and made only when needed. It materially increases the life of the battery. The standard construction of this engine has a gasoline pump to raise gasoline from the tank below the engine bed, and outside of the building if desired; also an electric igniter with dry battery, but no Bunsen burner. The Bunsen burner, tank, and tube is furnished if ordered instead of the igniter. The engines are made by the Charter Gas Engine Company, of Sterling, Ill., and are named the "Sterling." The firm also manufactures the Charter gasoline engines, horizontal or vertical; the "Sterling" portables; the Charter simple portable Sawing Outfit; the Charter "Hoister"; the combined Charter and double-acting pump; the horizontal Charter, with pumping gear, and the vertical Charter, with gear and walking beam. A prominent feature of this company's outfit is the Charter gasoline engines for propelling stern-wheel boats and side-wheelers.

WATER THERMOSTAT.

THE water thermostat used as a draft controller for hot water heaters, and the latest made by the Davis & Roesch Temperature Controlling Company, is simple in construction and little liable to fail in its operation. In this device we believe the firm has a control outfit worthy of the name, and the attention of residence owners desirous of securing heat regulation with a minimum of fuel and repairs due to overheated water will find the following facts of some assistance. Successful results from the use of hot water are most easily and inexpensively obtained by the employment of an automatic device to maintain an even temperature of the water. When a hot water heater has been installed it is a very simple thing to connect a D. & R. Draft Controller, which opens and closes the drafts of the heater according to the heat of the water. The D. & R. Thermostat is so constructed that it has what is technically termed a "graduated action" effect, whereby it is possible to balance the drafts of the heater without either being absolutely closed or open. With the draft door in this position a uniform temperature of the water is obtained with no perceptible variation from the degree at which the thermostat is set. Any change in the heat of the water will, of course, immediately affect the thermostat and consequently the drafts. The device is usually placed in the flow pipe of the heater, where it will get a good circulation of water. The water pressure is then attached to the lower connection of the thermostat, from the upper connection of which a pipe leads to the lever motor actuating the drafts. From this latter pipe connection a branch runs to the drain to carry off the discharge of the water from the lever motor, which motor is constructed with a diaphragm wall working on a lever arm and having a strong steel spring to operate against the water pressure when it is admitted by the thermostat to the diaphragm chamber. Thus it is evident that a perfect balance is possible between the water on one side of the diaphragm and the spring on the other, in which case the draft doors of the heater are both partially open. The D. & R. Draft Controller is equally applicable to another form of hot water heater used

extensively in apartment houses, small hotels, etc., where the water is utilized not for heating, but for washing purposes. In this connection it seems that the thermostat supplies a practical means to perform a function a long time forthcoming and now very welcome to the various buildings of the country. The constant trouble with overheated water, the annoyance to tenants, the scalding and injury, especially to children, and the expense of retaining a watcher to prevent these troubles, are avoided by the use of this device. The illustrated and descriptive catalogue issued by the company will fully explain any and all points covering the construction, application, economy, and action of the thermostat. It will be sent, without cost, on request.

Address, No. 276 New Jersey R.R. Avenue, Newark, N. J.

METAL FURNITURE.

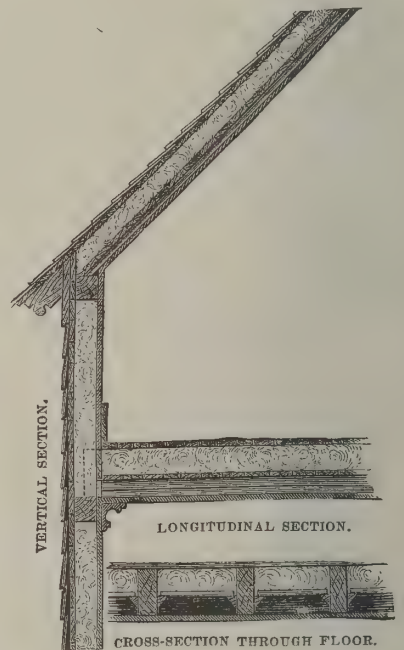
A RAPID advance is noticeable in the development of the metal furniture industry. The satisfaction of those who have installed this modern equipment for office, store, or house service is frequently expressed in terms like this: We have simplified the problem of furniture equipment by the exclusive use of steel fixtures. Those who employ this infallible material of pickled and cold rolled steel stand for its use on the score of lasting durability, handsome appearance, and its many "proof" qualities. It is movable, without damage; usable, without defacement; beautiful, without fading. It will never take on the dull drab, for by a special process the makers have reached a highly attractive and artistic finish, which it is their intention to maintain unless changed by some future improvement. Metal furniture economizes spacing, is extremely light for its strength; is unaffected by cold, heat, dryness, or moisture extremes; is fire, water, dust, rat, mouse, and vermin proof; does not warp or crack; and protects valuable documents and articles. The above attractions and advantages are secured in the output of the Berger Manufacturing Company, Canton, Ohio, and from our information on this line of goods we may claim that the firm is unsurpassed by any metal workers of a like industry in the world. Among the pieces of furniture of the more important sort we mention the case of roller bookshelves, for State, county, and municipal work; bank furniture of every description, including counters, grilles, bookkeepers' desks, and every required accessory; steel counters, for use of county officials, banks, and department stores; flat top and half top desks; plain adjustable shelving, adaptable to use in libraries, department stores and wherever plain, adjustable shelving, covered by glass sliding doors, sliding roller curtains, or plain openings without covering, is desired; duplex roller curtains, adapted to various cases; plan filing cabinets for use in keeping plans, sketches, etc., of architects and engineers; card indexes; card index cabinets; and more than a hundred other styles of cabinets. Wardrobes and shop lockers; vault omnibuses; standing tables; library tables are also features of the beautiful display of furniture shown in the latest catalogue issued by this firm. The specialty of the works is the vault equipment. Thoroughly competent designers can work out your problems of vault construction if favored with correct data and specifications. Any one interested in metal ceilings and side walls, multiplex fireproofing, roofing, siding, and special work, metal shingles and tile, metal house, well, and spray pumps, and lanterns, lamps, etc., may ask for and will receive a catalogue covering any class of goods just mentioned.

TIN ROOFING.

THE celebrated American Sheet and Tin Plate Company has issued its calendar for the year 1905. It comprises a small book attached to an illustrated colored hanger or panel. The leaves of each month when lifted into position reveal in clear cut letters and figures the usual arrangement of days and dates. Means are provided that easily hold the exposed pages and the waiting part of the calendar firmly in place. Each register page is topped by a notice space which has some scientific or witty gossip about the qualities of the M. F. brand of roofing tin. A few supplementary pages treat of M. F.terne plates, historically and practically; give standard weights and gages of tin plates, and note some of the other products of the firm. The phases of the moon are supplied, and the compiler has had the discretion of not indulging in meteorological folk-lore to the extent of giving the daily run of weather for the whole year. Send for this convenient and clean little table for the current year. Frick Building, Pittsburg, Pa.

MINERAL WOOL.

MINERAL wool has for its basis enduring mineral and organic fibers; for its properties, insulation of heat, protection against frost, fireproofness, insulation of sound, protection against rodents, insects, and germs; for its comforts, seasonal warmth, coolness, and dryness. It is applicable in floors, walls, partitions, and roofs. A house lined with mineral wool is shown in the sections of the accompanying illustration. The wool is essentially a vitreous substance converted to a fibrous condition. In appearance it consists of a mass of very fine fibers interlacing in every direction, thus forming an innumerable number of minute air cells. The resemblance of these fibers to those of wool or cotton has given to the material the name of mineral wool in this country; but it is only in appearance and softness that any similarity exists between the mineral and organic fibers. It partakes of the nature of glass without its brittleness, being soft, pliant, and inelastic. Of irregular thickness, the fibers cross in all possible directions. Mineral wool is made by converting scoria and certain rocks, while in a melted condition, to a fibrous state. It has unsurpassed power to resist the transmission of heat and cold, by holding in confinement a large proportion of air. Closely allied to the subject of heat insulation is the very important matter of frost-proofing. Repeated trials have shown that this wool makes a thoroughly effective protection for water pipes under freezing exposures considered extra hazardous. Its free use for this purpose will relieve householders and manufacturers from serious



SECTION OF MINERAL WOOL.

annoyance and loss. A thickness of three inches and upward, according to the situation of pipes, is recommended. The material is non-combustible and practically indestructible by heat. Buildings principally constructed even of wood would burn very slowly if packed with mineral wool, and great security against fire is thus afforded. The use of wire or corrugated iron lath, in connection with the filling of wool between the studding, is being largely adopted by progressive architects and people who are building. This plan of construction affords the best protection against fire, short of the use of absolutely non-combustible materials in the entire building. For not only are there no open spaces for the spread of the fire, but the lath, not being combustible, retains the wool in place, thus preventing the fire from passing from one room to another. During the past year many buildings have been constructed in this way. The inelasticity of the wool and its want of solidity prevents transmission of sound, and one of the agreeable results is the material acting as a sound deadener for floors and walls. As sound is communicated by the actual contact of beams, and especially by the vibrations of the air between them, it can be readily understood how this porous substance will have a muffling influence on the compact parts of a building. Analysis of mineral wool shows it to be a silicate of magnesia, lime, alumina, potash, and soda. There is nothing organic in the material to decay or become musty, or to furnish nourishment or comfort to insects or vermin. Houses lined with this fiber will not become infected. The application of the wool in floors, walls, partitions, and roofs, for dwellings, apartment houses, flats and general buildings, and estimates of the quantity required, is very fully treated in the illustrated brochure issued by the manufacturers, the United States Mineral Wool Company, No. 143 Liberty Street, New York, N. Y. It is called, "The Uses of Mineral Wool in Architecture," and will be sent on request to any one interested in the product.

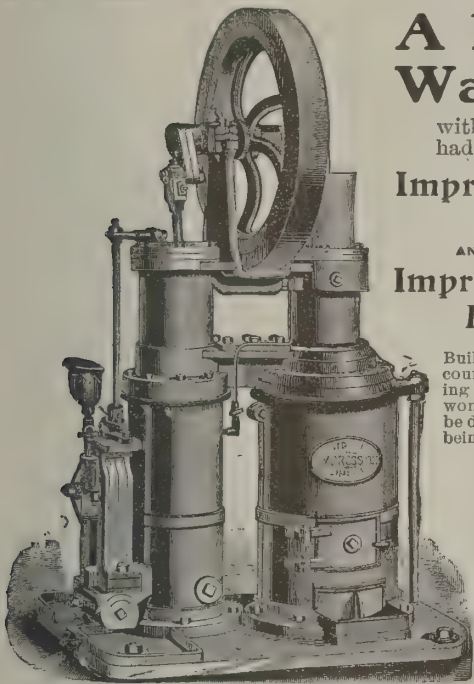


PEARSON COATED NAILS have a holding power more than twice as great as any other kind. They resist the weather longer than ordinary wire nails and have other advantageous features. The coated flooring nails—under the trade name of “Leaders”—are a radical departure from the rut, and excel in every detail. They save 30% in labor and are sold at attractive prices.

J. C. PEARSON CO., BOSTON

FULLER BLDG.
NEW YORK

RAILWAY EXCHANGE BLDG.
CHICAGO



A Never Failing Water Supply

with absolute safety, at small cost, may be had by using the

Improved Rider Hot Air Pumping Engine

AND
Improved Ericsson Hot Air Pumping Engine

Built by us for more than 30 years and sold in every country in the world. Exclusively intended for pumping water. May be run by any ignorant boy or woman. So well built that their durability is yet to be determined, engines which were sold 30 years ago being still in active service.

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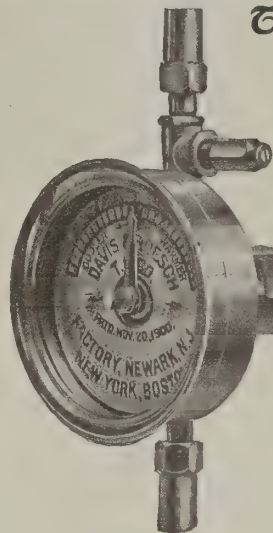
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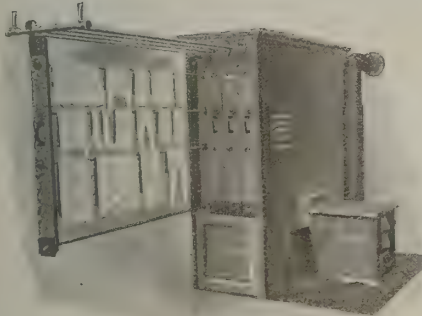
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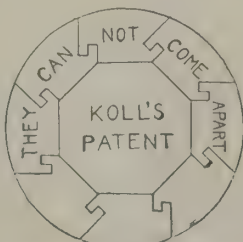
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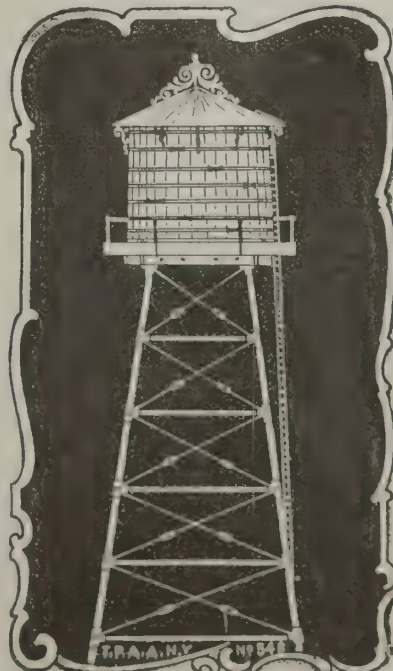
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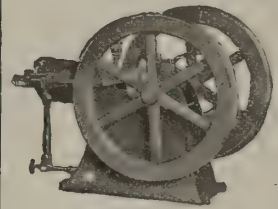
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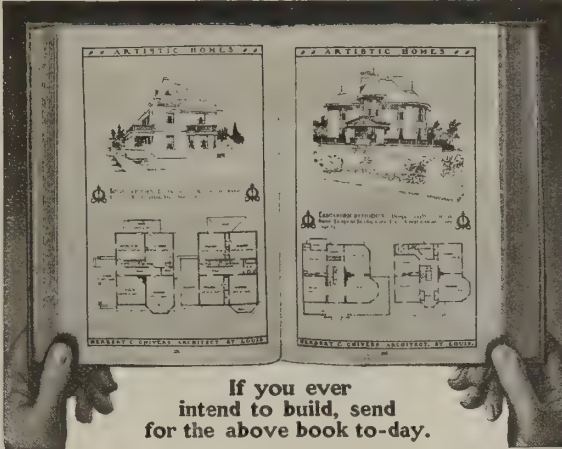
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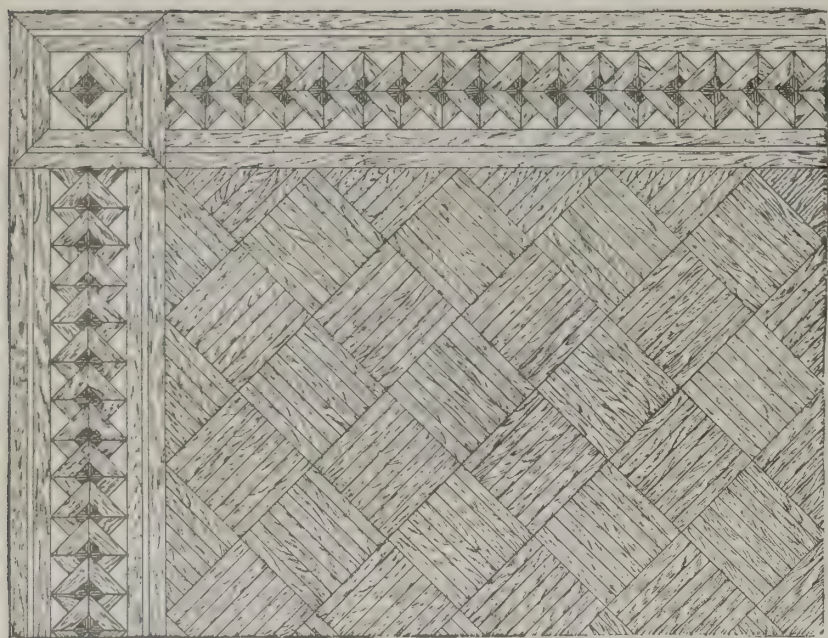


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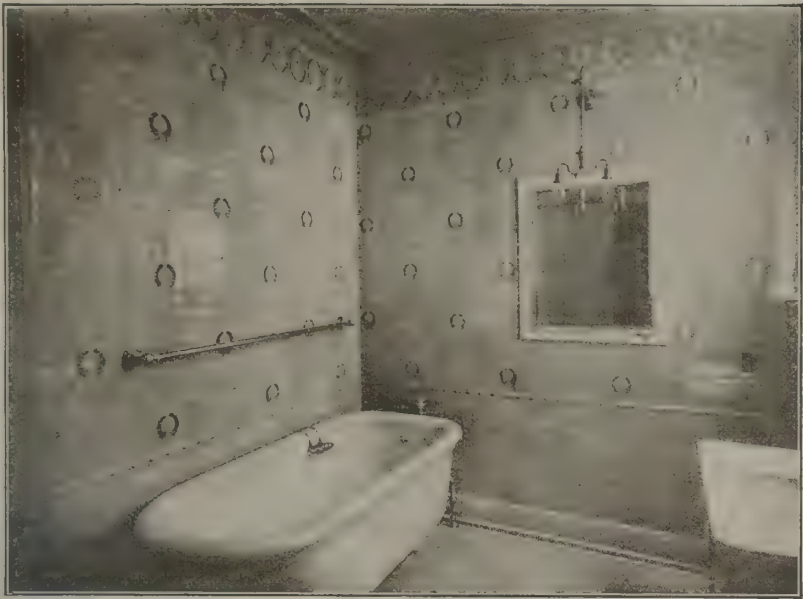
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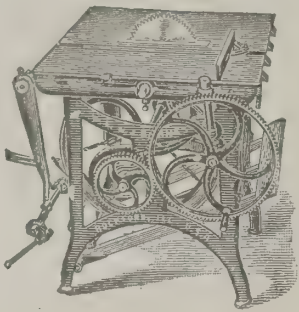
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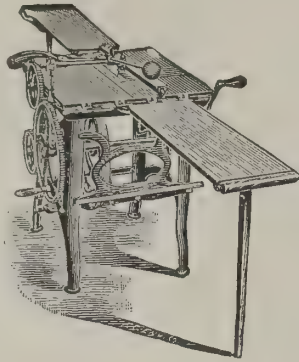
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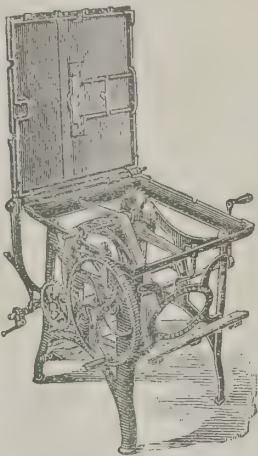


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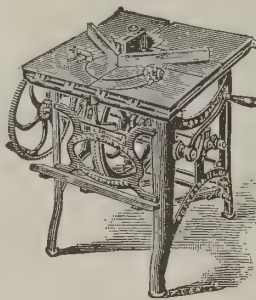
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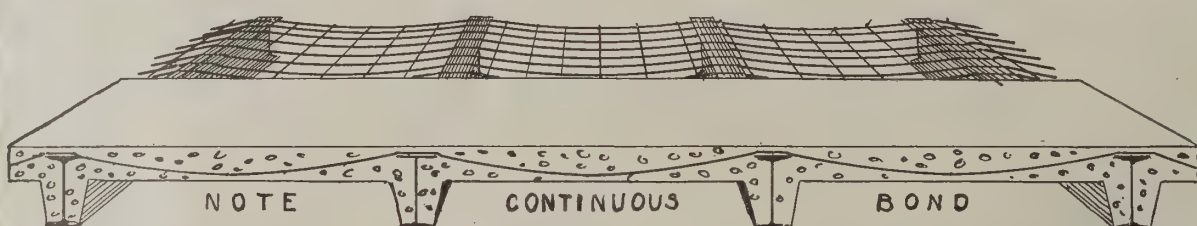
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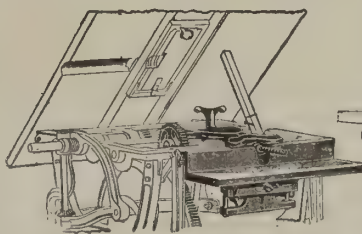
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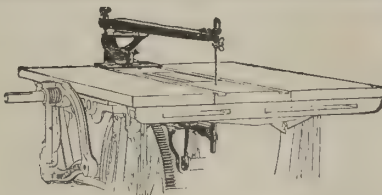
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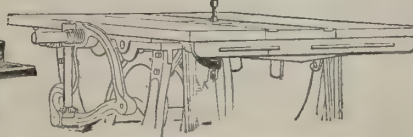
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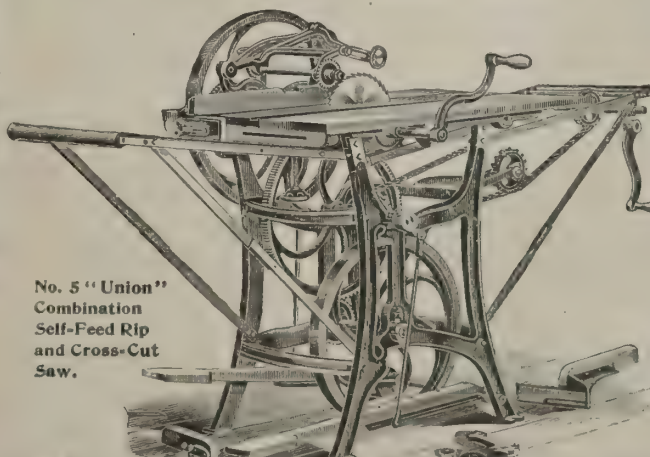
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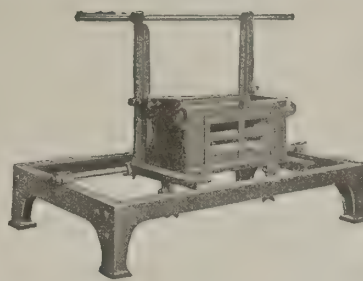
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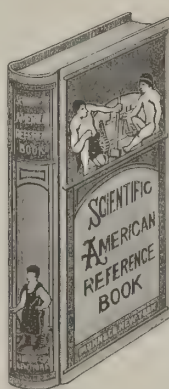
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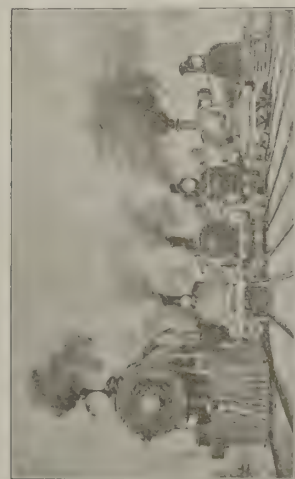
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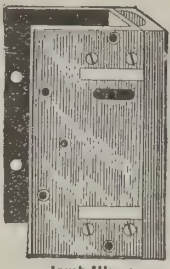
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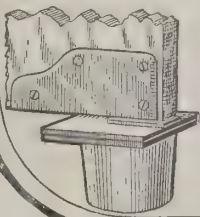
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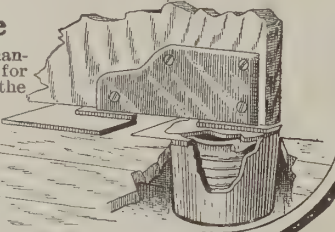


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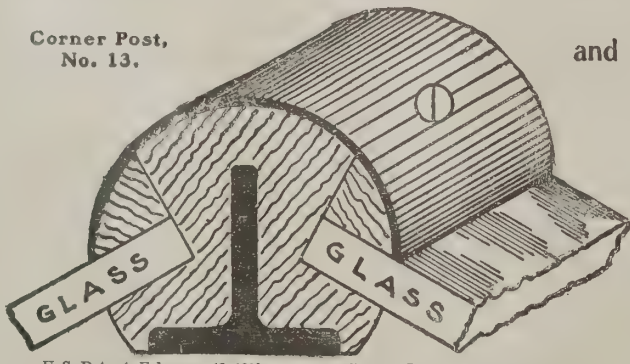
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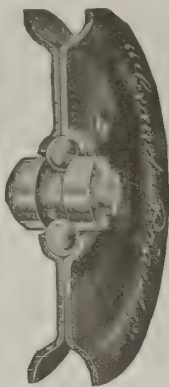
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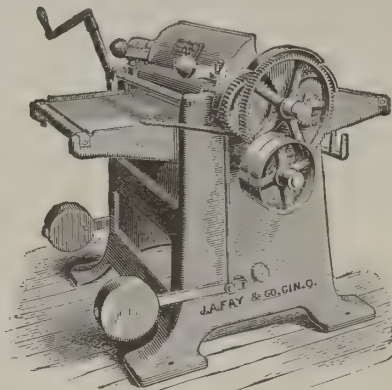
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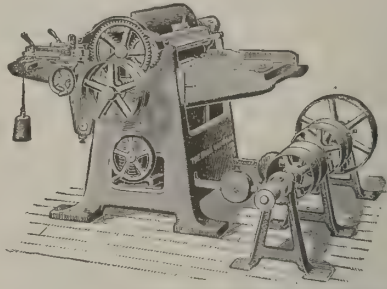
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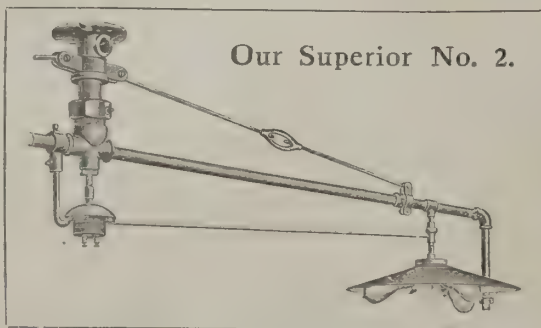
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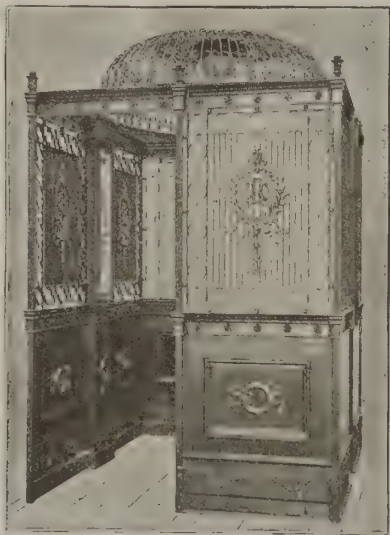
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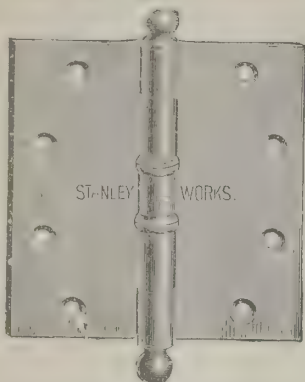
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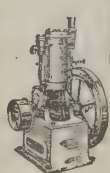
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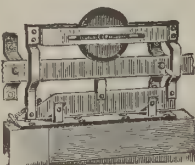
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SCIENTIFIC AMERICAN

Building Monthly.

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THE HALL.

THE COUNTRY SEAT OF E. T. H. TALMADGE, ESQ., BERNARDSVILLE, N. J.—See page 25.
MESSRS. LORD AND HEWLETT, ARCHITECTS.

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**The engravings presented in this issue are made from photographs taken specially for the SCIENTIFIC AMERICAN BUILDING MONTHLY.

MONTHLY COMMENT.

JUST a little common sense in the matter of expense will help amazingly in the building of a house. House building is one of those rare undertakings in which the most careful preparation, the most judicious estimating, the most painstaking care, will lead to results that are far removed from the truth. Bills for extras are so likely to come forward that their appearance should be regarded as certain. Mere protest will not pay them, and is seldom effective in reducing their amount. They belong to the class of contingencies that must be expected, and the burdens they entail must be met.

PNEUMONIA has come to the front as the most fatal of the diseases which afflict our largest cities. Statistics of New York and Chicago amply confirm this terrible fact. In the first six months of 1904 there were 42,700 deaths from all causes in the City of New York; of these 8,360, or nearly 20 per cent., were from pneumonia. In 1903, 9,714 persons died from this disease in New York. The total death rate for the year in New York for 1903, was 18.8 per 1000, and for the first six months of 1904, 22.23 per 1000, the increase being chiefly due to acute lung affections. In Chicago the figures are almost as significant, the total for 1903 from pneumonia being 4,629. With the spread of pneumonia has come a decrease in consumption. This is well established by the percentage tables. The tuberculosis death rate had decreased in New York in thirty years from 4.27 to 2.41 per 1000, while the pneumonia death rate has increased from 1.95 to 2.89. The latest available figures for New York give the death rate from consumption as 11.5, and of pneumonia as 17 per cent.; Chicago shows a consumption death rate of 11.3 per cent., and a pneumonia death rate of 13.6.

THESE figures are not only terribly impressive in themselves, but they have a special significance be-

cause the nature of pneumonia has only recently been made clear as a germ disease, and comparatively little progress has been made in its scientific study. An important fact disclosed by the study of its statistics is that it is a disease of cities, rather than of the country. The census of 1900 showed that the mortality per 100,000 inhabitants of cities was 233.1, while for the rural population the percentage was 135.9. The figures for consumption, to complete the comparison, were 204.8 for cities, and 134.1 for rural districts. Just what the relationship may be which exists between houses and pneumonia and other lung diseases is not yet definitely established, but that there is a connection, and a very close one, is apparent from a study of the figures.

PARIS is at once the earliest and the latest of the great cities of the world to undertake a great scheme of internal improvements. The French capital has, in truth, long been the ideal metropolis in the matter of public betterments, certainly since the great changes introduced by the late Baron Haussmann were carried out. These betterments, however, were chiefly confined to one side of the river Seine, and resulted in differences in planning, so great that, in a sense, Paris is now, and long has been, two cities, placed side by side on each bank of the river. A new loan of two hundred million francs has recently been voted for the French capital, of which eighty millions will be devoted to street improvements. The betterment of cities has, for some time past, occupied the public mind in many of the great capitals, of which changes due to private enterprise—as in New York and London—have amounted to a rebuilding of many large sections. In Paris, however, the greatest improvements have always been carried out by government enterprise, and the new plans will be conducted under the same auspices.

HELPS TO HOME BUILDING.

THE SECOND OF A SERIES OF TWELVE PAPERS.

DIFFICULTIES TO OVERCOME.

THERE is nothing easy in building a house if the owner exercises any supervision of the process. Intelligent, directing constructive supervision the owner can not give, nor is such expected of him; but the man who starts to build a house, and who keeps in close touch with the work, will find himself embarked on a task involving many difficulties.

It is easily possible for the owner to know too much and to know too little. With the best intentions in the world his cooperation, in by far the largest number of cases, is not needed. It is the architect's business to supply the intelligent supervision, the personal direction, the constructive and artistic control, without which no good building enterprise can proceed. The owner may have the best intentions in the world, his single aim may be to help, his sole desire may be to obtain a home that, so far as his knowledge goes, will be the best home possible for the money; but at the very best his knowledge will be but theoretical, and he will be entirely wanting in the practical interpretation of building conditions which the architect has at his fingers' ends.

If the owner will entrust the matter entirely to his architect he will have a responsible person who, presumably, is entirely capable of carrying out the work. There is a great deal of comfort in being able to definitely fix responsibility. Every undertaking, whether it is building a house or laying a sewer, requires a head who is responsible for the carrying out of the work. The utmost effort on the part of the owner will be entirely fruitless if he does not, very early in the game, recognize the value of the architect's headship and the commanding part he must take in the work.

The moment this leadership and responsibility are recognized a great step forward will have been taken. Difficulties may not wholly disappear, but the owner's responsibility for them will measurably diminish and perhaps altogether cease. The building of the house will no longer be a regretted task, but one that will be pursued with calm equanimity.

It is not necessary to hold a brief for the architect to argue for his employment. He has demonstrated his ability and his necessity time and time again. The art of building is a most complicated one, touching on many industries and arts, and requiring very wide practical knowledge for its successful pursuit. No one who has not made it his business to become familiar with them, who has not studied these many problems in a practical way. This the architect has done, and the very considerable progress that has been made in the building of domestic dwellings in the last half century—progress which has given us houses more beautiful than those formerly built, houses better equipped for living in, houses more elaborately furnished with life preserving and life saving apparatus—has been chiefly due to the increased importance

of the architect, the broader knowledge he brings to his task, the wider sympathies with which he undertakes his very onerous duties.

It is quite true that many very excellent buildings have been erected, and especially in America, without the aid or the cooperation of the architect. The architect, as he is now understood, did not exist in the Colonial period in which many fine dwellings and other structures were built in America. But the problems involved in the construction of these old-time dwellings were very different from the problems which obtain today, and which are present even in buildings of small size and very moderate cost. Moreover, the time consumed in the erection of these old buildings was very much greater than the time the average man is now willing to give to the building of his own home. Life, apparently, is now so short—although statisticians tell us it is actually more prolonged than formerly—that no sooner is the idea of home building once embraced than immediate construction is insisted upon as one of the prime essentials. Men trained in the art of building are imperatively necessary to the building work of to-day. We may not like our architects, but we can not get along without them.

Nor are they expensive adjuncts available only for the wealthy. Their knowledge and experience are well worth their price. Their familiarity with the practical difficulties of building is alone more than worth their cost. And even if they are not artists by nature, it is dollars to doughnuts that they can design a better house than the average layman, whose first acquaintance with architecture in its practical sense is obtained from his experience gained in building his own home.

The builder, as he is now known, is a resource of no value whatever. The area of his knowledge is circumscribed. He attacks the problem from a narrow standpoint. His practical knowledge of the art of building may, in a personal sense, be broader than that of the architect, who very likely has never driven a nail or sawed a board in half. Even these simple operations require some practise to make perfect; but that these arts are easy ones, readily acquired and not very profitable, and hence not attractive, is apparent from the multitude of persons engaged in these industries, and who never, in the longest possible lives, do anything else.

And least of all should one depend on oneself. Guides to self-building are published without end; all sorts of hints, suggestions, methods and procedures are available for him who wishes to read them. Reputable firms offer sets of plans at marvelously small prices. So many inducements are offered to the carrying out of building enterprises without professional assistance of any kind, that it is nothing short of a miracle that our architects are more numerous and more prosperous than ever before. Can there be more positive evidence of their value?

It is a difficult task to build a house. There is nothing "easy" in any part of the work. And this is true of small houses as well as of great ones, of whose complexity all the world is aware. And the more one concerns oneself with the process of building, the greater the difficulties seem, the more arduous the undertaking, the more vexatious and trying. There is so much fuss and worry in the world that the best way, in house building, is the easiest way. And the easiest way is to employ a man capable and honest, who knows what to do and how to do it. If he has the confidence of the owner, the result will be the best possible to obtain under the conditions of the work.

Just a word or two may be added on the financial side of house building. It is never a cheap thing, as cheapness is understood by the bargain-counter standard of the day, to build a house. A cheap house is apt to have but one merit, and that is its cheapness. It is seldom beautiful and is very likely to be slighted in the construction. The prices of materials and labor, especially in the large cities, exhibit painful tendencies to increase; a house that might have been built for \$5,000 ten years ago would now require a considerably larger sum. It will be helpful to keep these elementary facts well in mind before proceeding in any building enterprise. Bills for extras are almost unavoidable, certainly when the owner is on the ground, daily seeking to improve his own dwelling and make it the "best ever." The man or woman who starts to build will find it will ease up things amazingly if, at the very outset, a willingness is manifested to pay more, in the end, than has been proposed at the outset. But this willingness should be entirely hidden from the architect, the builder, and all concerned in the finances of the undertaking. All these people may be, and very likely are, the pink of honesty and good faith; but the cost of any building may be so marvelously increased in entirely legitimate ways, that one's personal willingness toward financial expansion should be buried deep in the secret fastnesses of one's innermost consciousness. After all, the extra bills must be paid anyhow. Why not admit this possibility at the very outset?

NOTABLE AMERICAN HOUSES*

BY BARR FERREE.

THE HOUSE OF OGDEN MILLS, ESQ., STAATSBURG, N. Y.

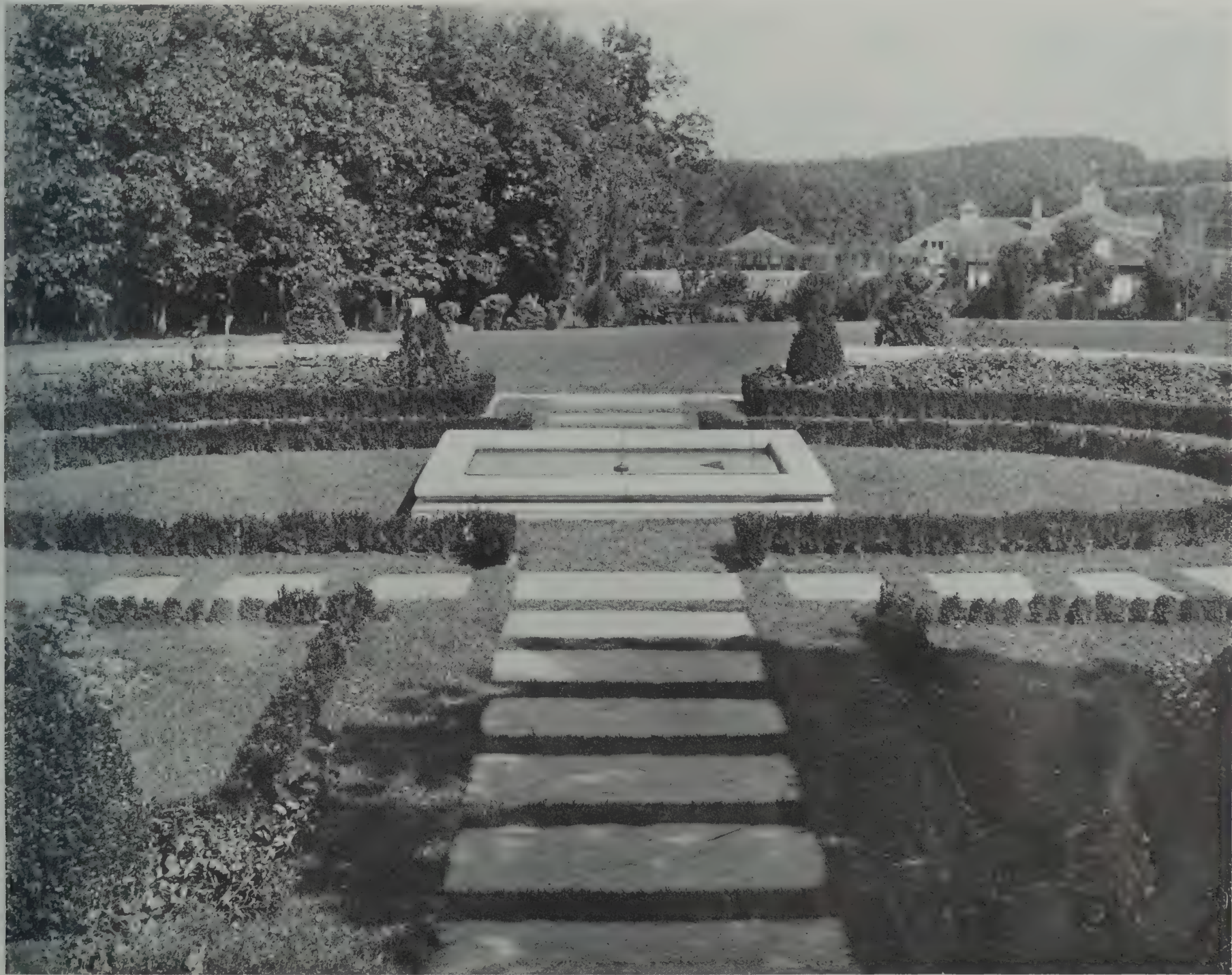
THE house of Ogden Mills, Esq., at Staatsburg, New York, stands on a high bank overlooking the Hudson River, and has the rare advantage of lawn that sweeps down to the water's edge, without the interruption of the railroad that cuts many of the fine sites on the river. It is superbly placed, with beautiful outlooks on to the almost matchless scenery for which the Hudson is famous. The old Livingston Manor House once stood upon this site, and not only determined the location of the present building, but its framework formed the basis of its structure, which has been built around it, and which served as the nucleus from which it has been expanded.

It is a house of beautiful stateliness and symmetry, with a front, which faces the river, of truly monumental proportions and grandeur; a building quite

pressive and beautiful when well done, and here carried out with consummate skill and ability. Long stretches of wall containing two stories of windows support it on either side. A broad, plain cornice is carried wholly around the top of the wall, and in the wings is surmounted with a balustrade. The walls are perfectly flat, without structural projections, but their architectural treatment has been designed with a fine realization of the value of refined surface decoration. At each end are two pilasters, reaching from base to cornice, and spaced so that a window opens between each pair. The window frames of the lower story are surmounted with small pediments carried on consoles; those of the upper story are simply outlined in the bare wall. A rectangular panel is sunk above the central window, and delicate festoons hang above the adjoining window on either side. A very considerable variety is thus obtained by simple means, and, since the scale of the building is so large, the resultant effect is at once fine and beautiful, quite rich, indeed, and yet without suggestion of overelaboration.

great hall is paneled with wood in a somewhat simple design; but it is a very beautiful room. The woodwork of the ceiling follows the general outline of the paneled walls. It is abundantly furnished, and contains some historic family portraits.

The chief rooms of the house connect directly with the hall. These constitute the series of apartments usual in dwellings of this type. The dining-room, which has been chosen for illustration, is a good example. It is a vast rectangular apartment paneled with colored marble throughout, the cornice on the longer sides being supported by pilasters. Magnificent tapestries form the leading feature of the wall decorations. They are stretched within frames, placed in the center of each wall, and are finely spaced within ample surrounding surfaces. The ceiling is richly detailed, with a great central circle and smaller circles at either end. The lights are girandoles and standards placed in the corners. The delicately carved and decorated side tables placed against the walls are beautiful pieces of furniture.



THE GARDEN TERRACE—THE COUNTRY SEAT OF E. T. H. TALMADGE, ESQ., BERNARDSVILLE, N. J.

Colonial in feeling and expression, but larger in scale and of more academic detail than the older house which preceded it. It is a front of great length, large enough to be impressive through sheer size, but very beautifully composed, and proportioned with fine grace and dignity. In the center is a portico of six great columns supporting a pediment—a feature always im-

* Previous articles in this series: "BILTMORE," THE ESTATE OF GEORGE W. VANDERBILT, ESQ., BILTMORE, N. C., February, 1903. "THE GARDEN AT 'GEORGIAN COURT,'" THE HOUSE OF GEORGE J. GOULD, ESQ., LAKEWOOD, N. J., August, 1903. "HARBOR HILL," THE ESTATE OF CLARENCE H. MACKAY, ESQ., ROSLYN, N. Y., September, 1903. "THE ORCHARD," THE COUNTRY SEAT OF JAMES LAWRENCE BRESEE, ESQ., SOUTHAMPTON, N. Y., November, 1903. "THE RESIDENCE OF W. L. STOW, ESQ., ROSLYN, N. Y., December, 1904. "WHITE HALL," THE HOUSE OF HENRY M. FLAGLER, ESQ., PALM BEACH, FLA., January, 1904. "FAULKNER FARMS," THE ESTATE OF MRS. CHARLES F. SPRAGUE, BROOKLINE, MASS., March, 1904. "THE HOUSE OF E. J. BERWIND, ESQ., NEWPORT, R. I., April, 1904. "GREY CRAIG," THE ESTATE OF J. MITCHELL CLARK, ESQ., NEWPORT, R. I., May, 1904. "BLAIRSDEN," THE ESTATE OF C. LEDYARD BLAIR, ESQ., BERNARDSVILLE, N. J., June, 1904. "KILDYSART," THE COUNTRY SEAT OF DANIEL O'DAY, ESQ., DEAL BEACH, N. J., July, 1904. "THE ESTATE OF HENRY W. POOR, ESQ., TUXEDO, N. Y., August, 1904. "THE COUNTRY SEAT OF STANFORD WHITE, ESQ., ST. JAMES, L. I., N. Y., September, 1904. "DREAMWOLD," THE ESTATE OF THOMAS W. LAWSON, ESQ., EGYPT, MASS., October, 1904. "THE HOUSE OF HERMAN R. DURYEA, ESQ., OLD WESTBURY, N. Y., November, 1904. "THE HOUSE OF MRS. RICHARD GAMBRILL, NEWPORT, R. I., December, 1904. "MRS. A. CASS CANFIELD'S HOUSE," ROSLYN, N. Y.

The scheme of the wall design behind the portico is distinctly different; thoroughly individual, yet in full harmony with the other parts. The windows here are in three tiers, the upper series being quite low. The entrance doorway is triple, the central opening having an entablature and pediment supported on columns, while the side openings are enclosed within pilasters. The pediment above the central opening and festoons over the entire group sufficiently emphasize the importance of this feature. Festoons appear again over the two central windows of the second story. The lower windows are without the pediments seen in the wings, and those on the stairs in the second tier are quite frankly placed exactly where they belong and out of symmetry with the others. This is an interesting illustration of the moderate freedom with which the architectural parts have been handled.

The interior of the house is thoroughly in keeping with its majestic exterior. The rooms are of great size, as may be expected in a house of such dimensions, and they are handsomely finished and furnished. The

NOTE.—The illustrations of Mr. Ogden Mills' house have been taken from "American Estates and Gardens." Munn & Co., publishers.

THE COUNTRY SEAT OF E. T. H. TALMADGE, ESQ., BERNARDSVILLE, N. J.

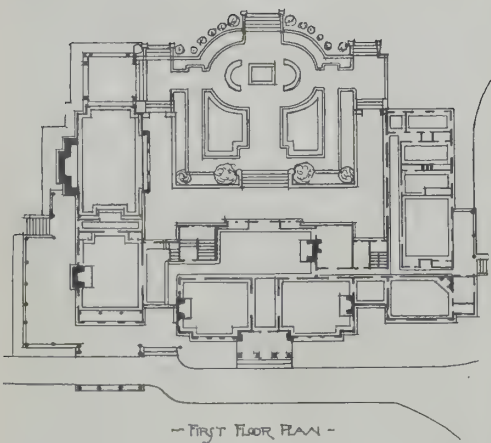
THE illustrations shown on pages 23, 25, 26, and 27 present the country seat of E. T. H. Talmadge, Esq., at Bernardsville, N. J. The building is treated in the Colonial style of architecture, with classic detail. The walls, from the grade to the cornice, are of wood, with the exterior framework covered with rough hewn shingles, left to weather finish in their natural state, while the trimmings and the blinds are painted ivory white; the whole is surmounted with a hipped roof, which is covered with shingles.

The main entrance, in the center, has a portico supported on fluted Ionic columns. On either side of this central building are elongated wings, forming an open court. At the rear of the main building the space is devoted to a formal garden, laid out in a geometrical manner, with walks laid with slabs of red slate,

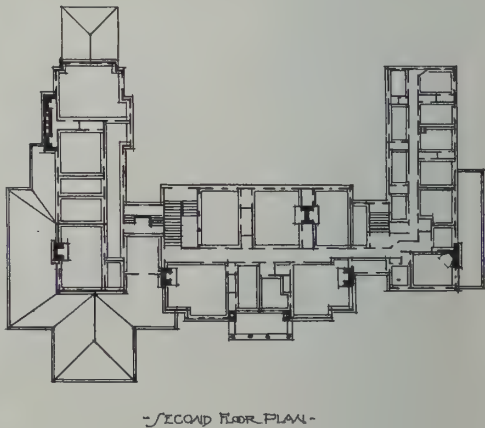
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THE ENTRANCE FRONT.

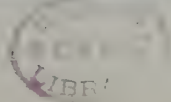


THE PORTICO.



THE GARDEN FRONT.

THE COUNTRY SEAT OF E. T. H. TALMADGE, ESQ., BERNARDSVILLE, N. J.—See page 25.
MESSRS. LORD AND HEWLETT, ARCHITECTS.



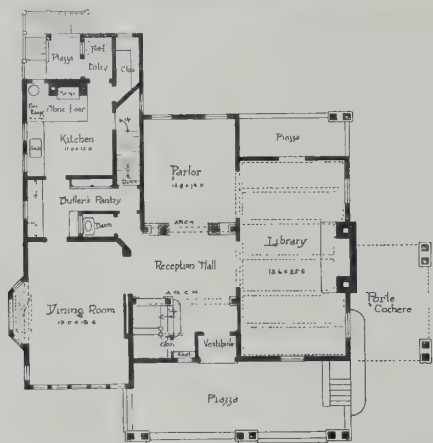


THE DRAWING-ROOM.

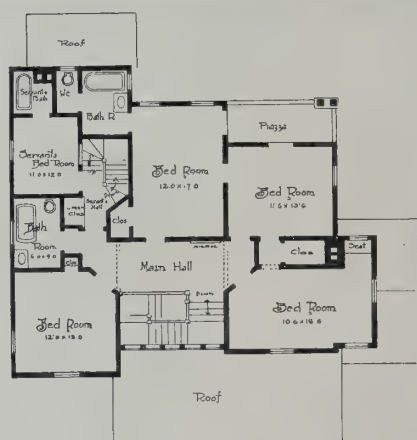


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THE COUNTRY SEAT OF E. T. H. TALMADGE, ESQ., BERNARDSVILLE, N. J.—See page 25.
MESSRS. LORD AND HEWLETT, ARCHITECTS.



— First Story Plan —



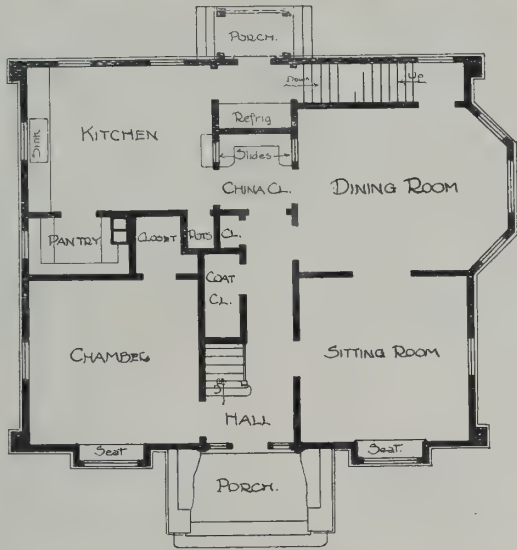
— Second Story Plan —



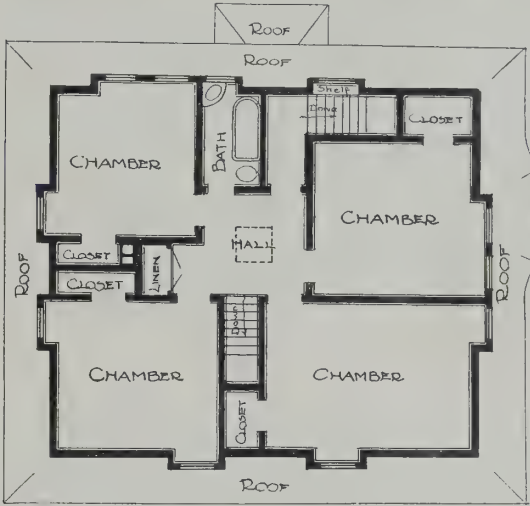
THE HOUSE OF DR. F. EDSALL RILEY, NEWARK, N. J.—See page 39.
MR. WILLIAM D. JONES, ARCHITECT.



THE GARDENER'S COTTAGE.



First Floor Plan.



Second Floor Plan.



THE GARDENER'S GATE.

A GARDENER'S COTTAGE AT CHESTNUT HILL, MASS.—See page 39.
MESSRS. COOLIDGE AND CARLSON, ARCHITECTS.

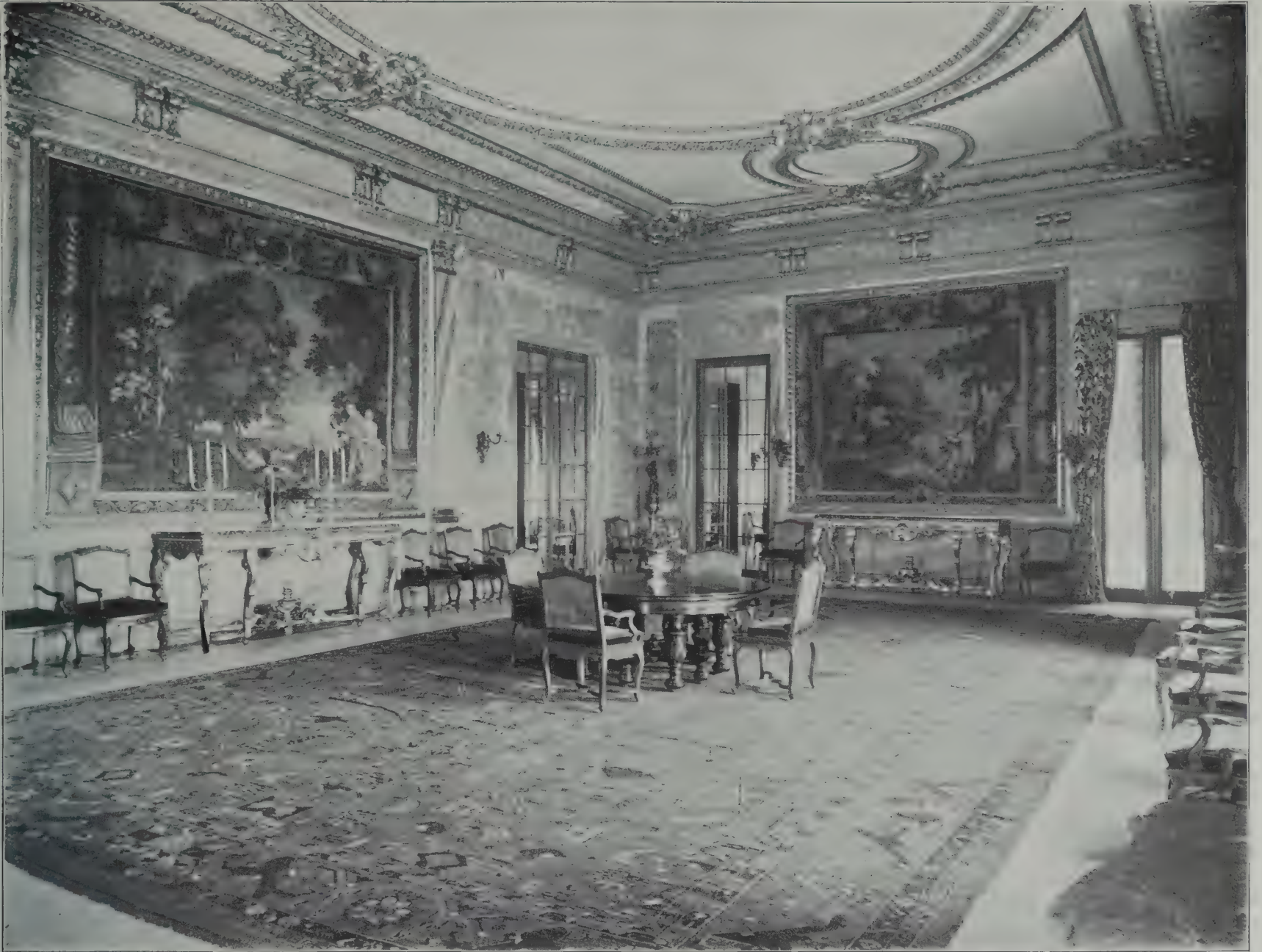


THE ENTRANCE DRIVE.



A TURN IN THE ROAD.

ROADWAYS IN THE ESTATE OF E. A. SPERIGEMAN, ESQ., PATERSON, N. J.—See page 40.



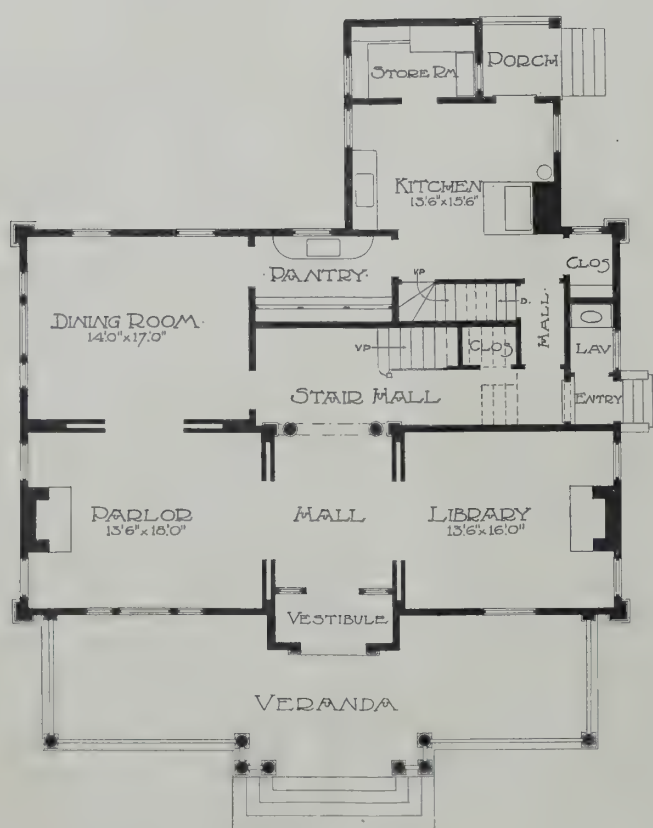
THE DINING-ROOM.



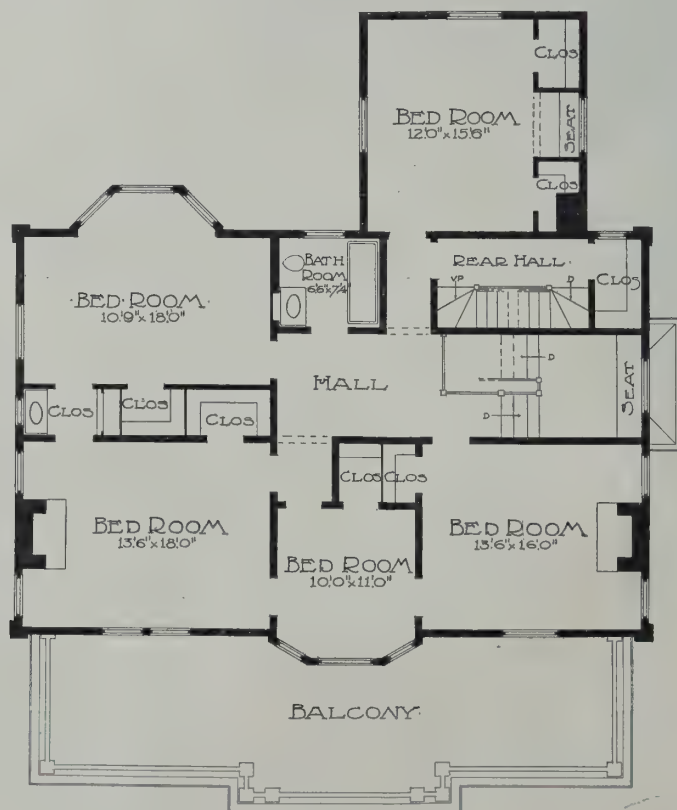
THE ENTRANCE HALL.

THE HOUSE OF OGDEN MILLS, ESQ., STAATSBURG, N. Y.—See page 25.

MESSRS. McKIM, MEAD, AND WHITE, ARCHITECTS.



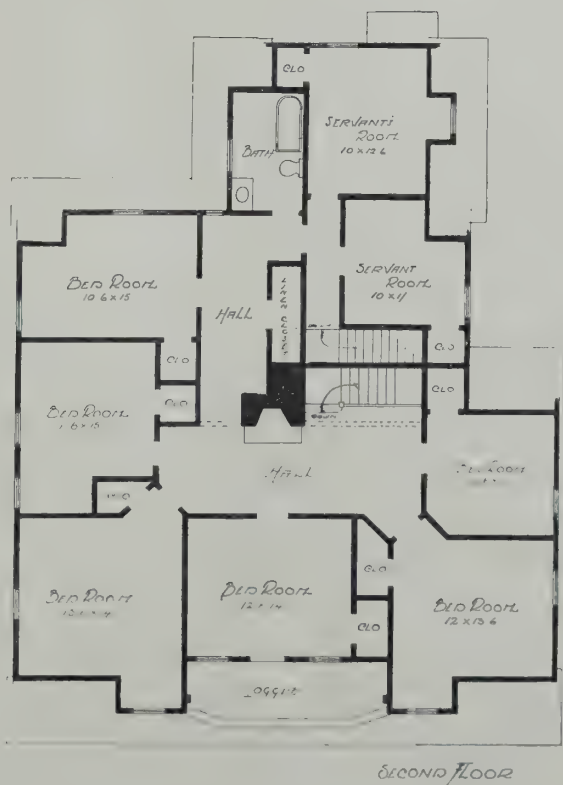
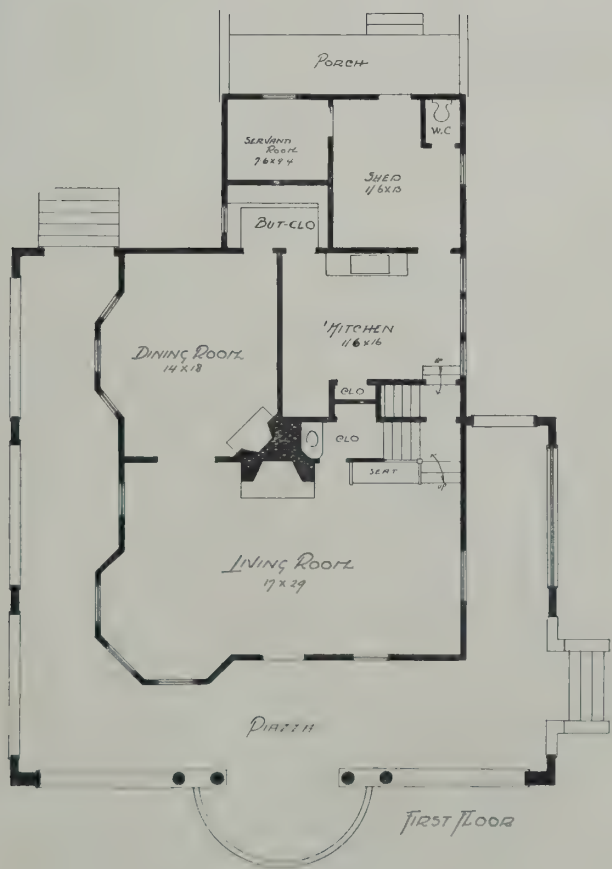
FIRST FLOOR PLAN



SECOND FLOOR PLAN

THE HOUSE OF MRS. MARY E. ALPAUGH, PLAINFIELD, N. J.—See page 39.

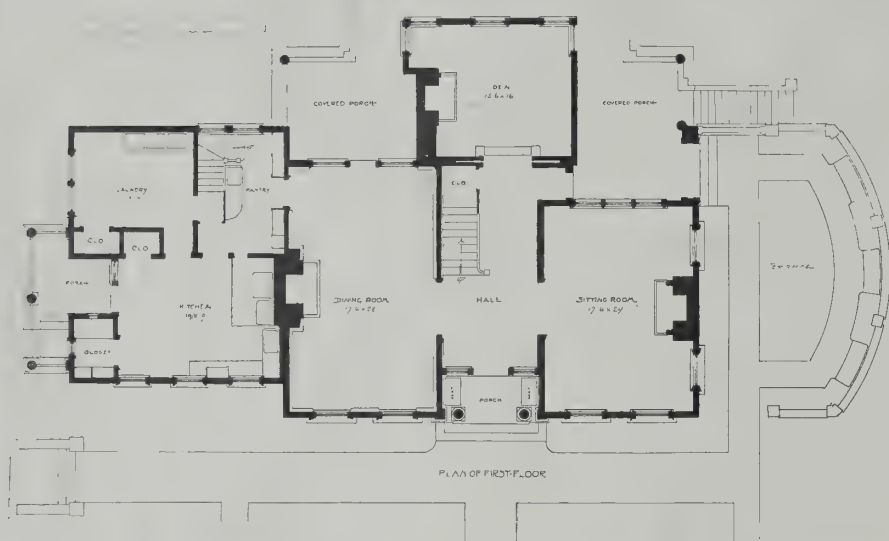
MR. A. L. C. MARSH, ARCHITECT.



A SUMMER HOME AT PROUTS NECK, MAINE.—See page 39.
MR. JOHN CALVIN STEVENS, ARCHITECT.



THE FRONT.



THE REAR.

RESIDENCE OF O. M. MITCHELL, ESQ., MONTCLAIR, N. J.—See page 38.

MESSRS. N. LE BRUN AND SONS, ARCHITECTS.

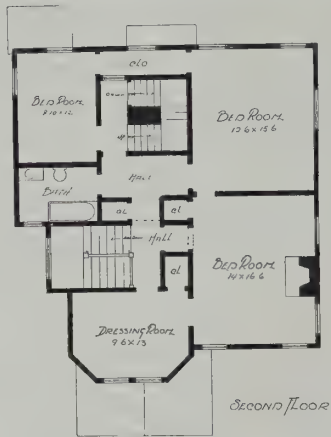


THE STAIRWAY AND HALL.



THE DINING-ROOM.

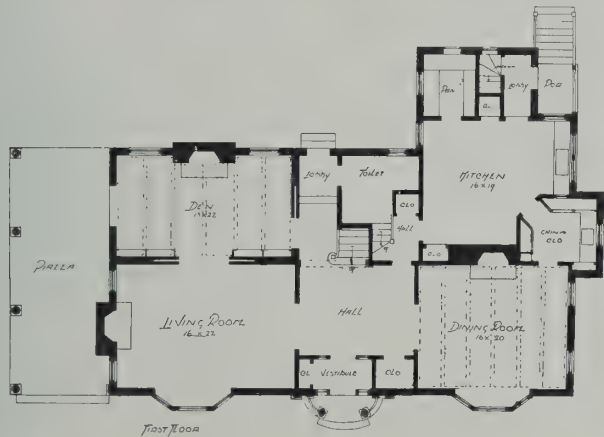
RESIDENCE OF O. M. MITCHELL, ESQ., MONTCLAIR, N. J.—See page 38.
MESSRS. N. LE BRUN AND SONS, ARCHITECTS.



A COTTAGE AT NEW HAVEN, CONN.—See page 40.



THE HOUSE.



THE LIVING-ROOM.

HOUSE OF GEORGE B. BAKER, ESQ., CHESTNUT HILL, MASS.—See page 38.
MESSRS. CHAPMAN AND FRAZER, ARCHITECTS.

**THE COUNTRY SEAT OF E. T. H. TALMADGE, ESQ.,
BERNARDSVILLE, N. J.**

(Concluded from page 25.)

hedged with box, and containing a fountain with a granite basin.

The entrance hall, as well as the living hall, is trimmed with antique oak. The walls are paneled from the floor to the ceiling which is beamed. The large open fireplace has a facing of Indiana limestone, and a mantel-shelf supported on old carved Spanish brackets. The staircase, of handsome design, is an attractive feature of this hall.

The drawing-room is trimmed and finished in white enamel; it has a low Colonial wainscoting, and an open fireplace with tiled facings and hearth, and a mantel of Colonial style with fluted Ionic columns. The dining-room is trimmed with mahogany, and it has a paneled wainscoting, a yellow plaster ceiling, and an open fireplace built of Tiffany brick, with the facings and hearth of the same, and a mantel of mahogany. The butler's pantry, kitchen, servants' hall and

ture of the house, and is recessed in an alcove, with walls of Caen stone. The fireplace is also cut out of Caen stone, with a shelf supported on carved brackets, with an overmantel carved and paneled in a heraldic style.

The second floor contains nine bedrooms, five bathrooms, and three boudoirs. The bathrooms are furnished with Italian marble wainscotings and floors, and porcelain fixtures and exposed nickelplated plumbing. The trim of this floor throughout is treated with old ivory white rubbed to an egg finish.

Messrs. Lord and Hewlett, architects, 16 East Twenty-third Street, New York.

**RESIDENCE OF O. M. MITCHELL, ESQ.,
MONTCLAIR, N. J.**

THE illustrations presented on pages 34 and 35 show the residence of O. M. Mitchell, Esq., at Upper Mountain Avenue, Montclair, N. J.

The building is located on a high point of ground,

finished with a wooden cornice. The staircase is entirely of white enamel, except the rail, which is of mahogany.

The sitting-room, to the right of the entrance, is also trimmed with pine, treated with white enamel, and is furnished with an open fireplace built of brick, with the facings and hearth of tile, and a Colonial mantel with columns. The den at the rear of the hall is placed two steps below the level of the main floor. This den is treated with a dark bottle green paint, and with walls of a lighter shade. It has an open fireplace of brick, with a mantel of quaint design.

The dining-room, to the left of the entrance, is of generous dimensions, and it is trimmed with oak and has a high paneled wainscoting, finished with a plate rack. The fireplace, which has facings and hearth of buff brick, has a mantel with a shelf supported on corbel brackets. At one end of the room doors open on to a covered porch. The butler's pantry, kitchen and laundry are fitted up with all the best modern conveniences complete.



THE DINING-ROOM—HOUSE OF GEORGE B. BAKER, ESQ., CHESTNUT HILL, MASS.

its dependencies are trimmed with North Carolina pine, and each is fitted with all the best modern conveniences. These quarters occupy the west wing of the house, over which the nine servants' rooms and bath are placed.

The billiard room is trimmed with cypress and has a paneled wainscoting to the ceiling and a beamed ceiling. It has an attractive archway with columns, a paneled seat, and an open fireplace built of brick, with the facings and hearth of the same, and a mantel of cypress extending to the ceiling.

The library is the most important room and occupies one wing of the house. It is dropped several steps below the level of the main floor of the house, and therefore secures a greater height of ceiling. The room is treated in the English Renaissance style, and is trimmed with oak, treated with a dark finish. The walls are paneled to the ceiling, and there are windows with transoms on three sides of the room, which are glazed with leaded glass. The ceiling, of old ivory plaster, is designed with a geometrical plan. The grand fireplace is the important fea-

nearly at the top of the Orange Mountains, and from the prominence of its site a commanding view is obtained of the surrounding country. Both on account of the prominence of the site, as well as its exposure, a special scheme of construction was found necessary in order to secure a comfortable house with a pleasing architectural effect. The house, being situated on the side of a hill as it is, affords an ample opportunity for two stories and an attic at the front and three stories and an attic at the rear.

The owner selected a stucco design in the Italian style. The exterior walls from grade are covered with stucco of a rough cast and of a pure white in color. The blinds are painted an apple green, and the whole is crowned with a brilliantly tinted roof of shingle.

The entrance loggia, the floor of which is finished with tile, forms the vestibule of the house, and with its columns and seats on either side makes an admirable feature. The main hall, together with the stairs, is finished in white pine, painted with white enamel. The walls have a low paneled wainscoting, above which they are covered with crimson, and the whole

The second floor is treated with white enamel paint, and it contains four bedrooms, sewing-room, dressing-room, two bathrooms, besides two servant rooms and bathroom. The bathrooms are furnished with porcelain fixtures and exposed nickelplated plumbing. The attic contains ample storage space and a trunk-room. A cellar, cemented, contains a heating apparatus, fuel rooms, cold storage rooms, etc.

Messrs. N. Le Brun and Sons, architects, No. 1 Madison Avenue, New York.

**HOUSE OF GEORGE B. BAKER, ESQ., CHESTNUT
HILL, MASS.**

THE house of George B. Baker, Esq., at Chestnut Hill, Mass., illustrated on pages 37, 38, and 39, is built of red brick, with white painted wood trimmings, and the whole crowned with a shingled roof, which is left in its natural state. The attractive porch at the front is a copy of an old Colonial one in Salem, Mass. There are two bay windows, placed on either side of the entrance. The piazza is on the side of the house, away from the entrance, and forms a quiet retreat. Upon entering,

one finds himself in a broad, spacious hall, which is treated with white enamel painted trim. This hall contains an ornamental staircase, with white painted balusters and newel posts and a mahogany rail. Underneath this stairway is placed the toilet, and it also forms an exit to the rear of the house.

To the left of the entrance is the living room, which is finished in mahogany, and it has a heavy base and a wooden cornice, and an open fireplace which is furnished with pressed brick facings and hearth, and a mantel of good design. At the rear of the living-room is placed the den, which is trimmed with chestnut, and is provided with a wainscoting composed of battens, ceiling beams, and an open fireplace fitted with brick facings and hearth, and a mantel.

To the right of the entrance is the dining-room, which is trimmed with mahogany, and is fitted with a beamed ceiling and an open fireplace with golden brick facings and hearth; the whole surmounted by a massive carved mantel and overmantel. The butler's pantry is fitted up with all the best modern conveniences, including sink, dresser, drawers, etc. The kitchen is provided with a large pantry, with icebox built in, and a pot closet.

The second story is painted white and it contains three bedrooms, a large nursery, and two bathrooms and plenty of closet room of generous size. The bathrooms are furnished with porcelain fixtures and exposed nickelplated plumbing. There are two guest rooms, the servant quarters and bath, and a trunkroom on the third floor. A cemented cellar contains the heating apparatus, fuel-rooms, laundry, etc.

Messrs. Chapman and Frazer, architects, 8 Exchange Place, Boston, Mass.

A SUMMER HOME AT PROUTS NECK, MAINE.

THE illustrations shown on page 33 present the summer home of Charles S. Homer, Esq., at Prouts Neck, Maine.

The building is a very happy combination of interesting outlines, and the whole is most artistically treated. There is no cellar under the entire house, and the building rests upon stone footings and cedar posts. The exterior framework, from the grade to the peak, is covered with shingles of red cedar, which are finished and stained a soft brown color, while the trimmings are painted an ivory white. The roof is covered with shingles, and is stained in harmony with a moss-green effect.

The interior is trimmed with cypress, the first floor being in the Flemish treatment. The living-room, which is the important room in the house, which it should be in a house planned for summer uses, occupies the ocean front of the house, and in an unobtrusive manner the stairs, which are of an ornamental character, rise out of this room, for there is no hall. At the side of the stairway there is a seat, and on a line with this stair-case is the open fireplace, which is built of red brick, with the facings of the same, and a hearth of red unglazed tile, and a mantel of quaint design. The walls have a high wainscoting, and the ceiling joints are dressed and exposed to view.

The dining-room is treated in a similar manner, and it also has an open fireplace with red brick facings and hearth, and a mantel. The butler's pantry is fitted up complete. The kitchen and its dependencies are fitted with all the necessary conveniences. The shed contains ample space for the icebox, toilet, and a servant's room.

There are six bedrooms, two servants' bedrooms, and a bathroom on the second floor. The large open hall has an open fireplace of brick and a mantel. Each bedroom has a well fitted closet. The bathroom is wainscoted, and is furnished with porcelain fixtures and exposed nickelplated plumbing.

Mr. John Calvin Stevens, architect, Oxford Building, Portland, Maine.

THE HOUSE OF DR. F. EDSALL RILEY, NEWARK, N. J.

ON page 28 will be found illustrations of a house recently built for Dr. F. Edsall Riley, at Mount Prospect Avenue, Newark, N. J. The house is designed with English feeling. The underpinning, piers and chimneys are constructed of rough Jersey brick, laid in red mortar, with the joints struck deep. The remainder of the building is covered on the exterior framework with sheathing, waterproof paper, and metal lath and Portland cement stucco, rough cast. The beams and all trimmings are painted ivory white. The

roof is covered with shingles and is stained a moss green.

The hall is treated with ivory white, and the walls and ceilings are covered with crimson burlap. The staircase is a very attractive one, and has a newel post formed by a column which rises up and supports a beamed archway. The parlor is also treated with ivory white, and is separated by an archway which is supported on columns of Colonial style. The parlor ceiling is finished in relief and fresco.

The library is trimmed with chestnut and is finished in a Flemish brown. The walls are covered above the paneled wainscoting with a reddish brown Oriental pattern paper. The ceiling is beamed. The fireplace is of cobblestone, lined with clinker brick.

The dining-room is trimmed with quartered oak, and contains an alcove for buffet, over which there are placed windows, glazed with delicate tinted glass. The butler's pantry and kitchen are trimmed with cypress and treated natural, and each is fitted with the best modern conveniences. The entry is large enough to admit icebox.

The second story is trimmed with whitewood and is treated with white enamel paint, and the doors are finished in a dark mahogany. This floor contains four bedrooms, two bathrooms, linen closet, and one servants' room, with bath. The two main bathrooms have

on fluted columns and pilasters. The staircase is designed in a handsome manner of hardwood, with turned newel posts and balusters.

The parlor is treated with white enamel, with egg shell gloss. It has an open fireplace, with facings and a hearth of white enamel tile and a mantel of Colonial style.

The library is trimmed with quartered white oak, and it has bookcases built in, and an open fireplace furnished with tiled facings and hearth and a mantel of good design. The dining-room is trimmed in a similar manner, and it contains a paneled wainscoting and a wooden cornice. The kitchen and its dependencies are trimmed with North Carolina pine and each is fitted with the best modern conveniences. The butler's pantry is well fitted up with drawers, dressers, closets, and sink complete.

The second floor contains five bedrooms, some of which are stained, while the others are painted ivory white. The bathroom is provided with a tiled floor and wainscot, and furnishings of porcelain and nickel-plate. There are three bedrooms, billiard-room and trunkroom on the third floor, besides a servants' bath. The billiard-room is handsomely finished off, and treated complete. There is a cemented cellar under the entire building, and it contains a laundry, heating apparatus, fuel rooms, cold storage space, etc.

Mr. A. L. C. Marsh, architect, 97 Nassau Street, New York.

A GARDENER'S COTTAGE AT CHESTNUT HILL, MASS.

THE illustrations on page 29 present a gardener's cottage at Chestnut Hill, Mass. The entrance way to the cottage is most picturesque in character, and is formed with a rustic gateway, over which there is placed a shingled hood, supported on rustic columns. The trees and flowers when in bloom present a brilliant setting for the little cottage, which is well placed in its surroundings. There is a cellar under the whole house, which contains a heating apparatus, fuel rooms, cold storage, laundry, etc. This cellar is enclosed with a stone foundation and underpinning; the latter built in a substantial manner with rock faces. The walls, and the roof which form the second story, are covered with shingles, and are stained a mossy green; the blinds are in a deeper green, as are also the trimmings.

The whole color scheme is so unique, and the building is in such harmony with its surroundings, that it is hardly noticeable except for the bright color of the window boxes in the second story dormers and on the front porch as one passes by. The hall, a central one, contains an ornamental staircase with newel post, balusters and rail. Underneath the staircase is a coat closet. To the right of the entrance is the sitting or living room, which has a window seat, and beyond this, and connecting, is the dining-room, provided with a bay window. Connecting with this room there is a second stairway leading to the second story, beneath which the stairs descend to the cellar. The china closet, between the dining-room and the kitchen, is fitted complete, and so is the kitchen, which is fitted with all

the best modern improvements, including a large pantry, and a lobby ample enough to admit ice-box. At the front, and corresponding with the sitting-room, is a bedroom with a large closet. The second floor contains four bedrooms and a bathroom; the latter fitted with porcelain fixtures and nickel-plated plumbing. The interior is furnished in Arts and Crafts furniture, with woodwork and wall paper to match, and with pleasing effect.

Messrs. Coolidge and Carlson, architects, 22 Congress Street, Boston, Mass.

A NEW ARCHITECTURAL HONOR.

THE New York Chapter of the American Institute of Architects have established a Medal of Honor to be awarded through the annual exhibition of the Architectural League of New York. The chief conditions of the award are that any architectural work in the United States, or Territory belonging to the United States, if completed within five years previous to the date of exhibit, may be offered for consideration; the architect or architects who designed such a work, in order to be eligible to the award, must present for exhibition one or more photographs of executed work, also one or more drawings, including a small scale plan, and shall submit to the jury such working drawings of the structure as they may desire to examine; and that an architect or firm of architects awarded a medal once shall be ineligible for a future award.



THE ENTRANCE PORCH AND DOORWAY—HOUSE OF GEORGE B. BAKER, ESQ., CHESTNUT HILL, MASS.—See page 38.

tiled wainscotings five feet in height and tiled floors, and both are furnished with porcelain fixtures and exposed nickelplated plumbing.

The third floor contains several bedrooms and ample storage. The cellar, cemented, contains laundry, steam heater, fuel rooms, cold storage, etc.

Mr. William D. Jones, architect, 245 Broadway, New York.

THE HOUSE OF MRS. MARY E. ALPAUGH, PLAINFIELD, N. J.

THE illustration shown on page 32 presents a house recently erected for Mrs. Mary E. Alpaugh, at Plainfield, N. J.

The house is designed in the New England Colonial style, and is built of frame which is covered with clapboards, and the whole is painted a soft light green, with trimmings painted an old ivory. The roof is covered with shingles and stained a dark green, making an unusual color scheme, which is excellent in its effect.

The interior details are Colonial in character. The hall is a central one and is trimmed with white quartered oak. This hall has a paneled wainscoting and ceiling beams. The vestibule has a paneled wall and a mosaic tiled floor. The staircase hall is separated from the entrance hall by an archway supported



The Household

AN IDEAL DINING-ROOM.

A NEW YORK paper, having conducted a competition for the best paper on the dining-room, has awarded its prize to Mrs. M. E. Lafferty, of Brooklyn, for the following article:

The dining-room, in my opinion, is the living-room of the family. It is the one place, especially in a large family, where all the members are brought together. It should, therefore, be made as attractive and homelike as possible.

The wall and floor coverings should be of bright, cheerful tones. Should the room have a southern exposure, green is good, but it is likely to be too cold a color in winter. Peacock blue would be better. For any exposure but a southern a bright but rich red would be best, because it gives necessary warmth and brightness.

The furniture should be neat and plain, but as handsome in material as the house affords. It should, however, correspond with the rest of the house. It is very bad taste indeed to furnish one room (usually the parlor) very elegantly and the remainder of the house out of harmony with it. If anything, let your extravagance tend toward the dining-room. It is as a host and hostess you express your hospitality; hence express it to the best of your ability.

In no place can a woman display her taste and refinement better than in her table. As nearly as your purse will allow, let the appointments be of the finest. Let it be your one extravagance. The table linen should be snow white. Silver, though it be not solid, may be made just as attractive when polished. Pressed glass, in many cases, may be made to look like cut-glass, when washed in hot soap suds with a brush. Should you not be able to afford a nice set of china, you probably can afford an American porcelain, which looks much like china and is inexpensive.

As you can get these in the department stores in what they call "open stock," you might select platters, vegetable dishes and serving plates in plain white. You will find them much more durable than the china. Odd cups and saucers, bread and butter plates and odd dishes will lend color to the board and give a pleasing effect.

If you know the value of china and keep your eyes open you may often run across excellent bargains. Not long ago a friend, in passing a "second-hand" store on Third Avenue, saw a French china bonbon dish in the window. He entered and priced it. "Thirty cents," said the proprietor. He evidently did not know the value of china, for it was worth fully \$2. In this way you might enhance the beauty of your dining-room and be able to set an attractive and appetizing table, for there is nothing affects the appetite more than the way in which things are served.

To add to the attractiveness of the room, an open grate fire, if available, is a most cheerful thing on a wintry day. And it is really remarkable how homelike and inhabitable a dining-room may be made by the addition of an easy chair and a small table containing a couple of the latest newspapers and magazines. A few pictures or a couple of plants at the windows give the same effect. These really do show some signs of life and comfort.

WALL PAPERS FOR GLOOMY ROOMS.

WHEN choosing new paperhangings for the walls of bedrooms and sitting-rooms, it is well to remember there is another consideration than that of artistic design and harmonizing color.

A scientist tells us, says an exchange, that in these "nervy" days, the color of one's surroundings is not a mere esthetic consideration. This is not as far fetched as it may appear. When there is blue sky above, who is not happier and more cheerful than when mist and fog obscure the light of the sun? If we love the outside world beautiful, it is quite reasonable to make our homes so.

Here are some rules by which to go. The most restful wallpaper is of one tint, without any pattern; this is good for nervous people. Have you ever, when ill in bed, reduced yourself to a state of nervous irritation by trying to join a big sunflower or something, to its stalk which has wandered away in the pattern? Red is supposed to be rather bad for nerves, but is warm and cozy, especially if patternless. Browns and drabs depress sensitive folk, while a rich, clear brown is said to be quieting and soothing. Green is splendid for the eyes, and ought to be in writing-rooms and libraries. Clear, but not too vivid, a yellow produces exhilaration and self-confidence, we are told.

A COTTAGE AT NEW HAVEN, CONN.

THE illustrations shown on page 36 present a cottage erected for Mr. G. A. Mirick, at New Haven, Conn. The house has a brick underpinning laid in red mortar. The superstructure is of wood, and the exterior framework is covered with matched sheathing, building paper and clapboards on the first story and shingles on the second. This clapboarding is painted a reddish-brown color, with white trimmings, and the second story is stained a soft brown color. The gables are beamed and are treated in harmony. The roof is shingled and stained a moss green. Dimensions: Front, 35 ft.; side, 35 ft., exclusive of porch. Height of ceilings: Cellar, 7 ft.; first story, 9 ft.; second, 8 ft. 6 in.; third, 8 ft.

The hall is trimmed with oak and contains an ornamental staircase turned out of oak. The living-room is trimmed and finished in Flemish oak, and contains an open fireplace built of brick, with the facings and a hearth of the same, and a mantel, and on either side of the fireplace there are paneled seats. The dining-room has an attractive window, and the den is a convenient retreat. The kitchen and pantry are fitted with all the best modern conveniences.

The second floor contains three bedrooms, dressing-room and a bathroom, the latter fitted with porcelain fixtures and exposed nickelplated plumbing. The third floor contains one large bedroom, servant's room and trunk room. A cemented cellar contains a laundry, furnace, fuel rooms, etc.

THE ARTISTIC ELEMENT IN BUILDING.

THE Architectural Record for January contains an article on Southern California and its architecture by Elmer Grey, wherein he says: The causes of the settlement and growth of Southern California are such as have been conducive to more culture than might be expected in a district so new. The population is made up very largely of Eastern people, who have in most cases brought taste and some degree of culture with them. After this praise has been bestowed, however, it must be said that there are plenty of men in California, as elsewhere, who are particular about their clothes or their equipages, but who entertain a slight estimate of the value of the artistic element in the buildings which they erect, considering that element as largely a matter of sentiment.

Art is the expression, through various mediums, of the most joyous aspects and the best ideals of the world, and familiarity with its standards implies familiarity with the best standards of life. There exists a certain elect society, eligibility to which is dependent upon the degree of such conversance. An acquaintance on terms of familiarity with the Muses of painting, sculpture, literature, music, and architecture is the means of admission. Seldom is there one thus acquainted who has not assimilated into his own nature some of the attributes or virtues of their standards and who is not able also to impart some of their charm to his fellows. The process of assimilation is the stuff of which culture is made, and the ability to impart its atmosphere is what makes a man welcome in the company of the cultured. The presence or absence of the artistic element in a building one erects is not, therefore, a matter of mere sentiment. It is one indication of a man's quality, his ability to enter into the highest life of his fellows, and those who ignore the value of the beautiful in their lives bar themselves from the world's best society.

A recent writer has reminded us that monumental architecture comes with the culmination of an art era, not with its inception, and that the American nation has a long ascendancy before it. This is particularly true of the Pacific coast because of its extreme newness. It took centuries of enlightened human effort, in addition to its natural beauty, to make the Bay of Naples what it now is, and there are places everywhere in Europe that literally exhale the fragrance of ages of interesting human life. As far as a history of such art influences is concerned, California might be said to be just starting. Practically the only emotion here aroused by historic man is that furnished by the North American Indian. The mission fathers offer the one exception. One may imagine the redskin in years past emerging from the brush on the shore of the Pacific to view the panorama of sea and mountains and then withdrawing to his inland wigwam. But the Indian has left nothing which contributes to the interest or beauty of the landscape, and practically nothing which adds to the taste of the people who have taken his place. It should not be expected of California, therefore, that the same innate taste be found among its people as exists in more mature European countries where works of art have long been public heirlooms and good taste is an hereditary instinct. And all this, of course, more or less applies to our entire country.



The Garden

THE GARDEN MONTH BY MONTH: FEBRUARY.

FEBRUARY is not much more active in garden work than January. In the Northern cities it is still the depth of winter, and there is little more to be done than to exercise a careful scrutiny over the plants and greenhouses, and to take care that all is well. But the spring season is a month closer at hand than on the first of January, and the careful garden lover will find much to do pressing the work of preparation for more active labor in the open, which will now soon be at hand.

The first of the year's flowering plants may be noted. Among these special mention may be made of the Chinese Primrose, the Primula Obconica, the Baby Primrose, the Gloire de Lorraine Begonia, and the Eupatorium. Some varieties of Narcissus and Daffodils, and the Jonquils may also be put into readiness for early blooming.

The Chinese Primrose requires a light soil, well mixed with sand and fibrous vegetable matter. The crown should be set well above the soil, which should slope away from the plant to carry off the water. It will bloom without sunshine. The Narcissus bulbs may be planted several in a pot, which should be kept in the dark for four or six weeks until the roots have well started. The tops will quickly mature after exposure to the light. The Primula Obconica requires a great deal of water, having many fine roots, while the Chinese Primrose will take much less. The Baby Primrose needs no sun, and will grow quite easily among larger plants. The Gloire de Lorraine Begonia is essentially a winter bloomer, and does badly in the summer time, when it needs the attention of an expert florist. The Eupatorium is a free bloomer, requiring only good soil, a moderate amount of water and freedom from frost. Hotbeds may be started in February or March for localities in the latitude of Philadelphia; for places as far north as Detroit, April will be found early enough. The seed of Rex and other Begonias may be sown in the house in February or March.

THE ROADWAY OF THE COUNTRY ESTATE.

THE esthetics of roadways are quite easily stated. They must, of course, have a natural and useful function. Their object, primarily, is to provide ways of communication. They must, therefore, begin somewhere and lead to some definite place. The short-cut roadway—the shortest line between any two given spots—has long since been discarded for the graceful curve. The curve is the natural line of beauty, and the additional length of a curved roadway finds ample compensation in the greater beauty which naturally appertains to that form.

Straight roads are, of course, both distinctive and valuable, especially when the estate is a large one, and it is possible to run a straight road for a considerable distance, bordering it the meanwhile with plants and shrubs, or wholly enclosing it within formal treatment. This, however, is something quite different from the straight bit of road that leads directly from the entrance to the grounds to the main doorway of the house. The latter is a system of planning that has some advantages; but obviously it is a system which should only be used when these advantages are clear and pertinent.

But whatever the form of the roadway may be, it is thoroughly evident that its esthetic effect is vastly helped by the treatment of its borders. These may be of grass, of flower beds, of shrubs, of trees, or a combination of these, arranged as seems best. In many successful roadways the arrangement of the plant borders is apparently natural if not absolutely so, and such forms of road gardening are generally enormously successful. It is seldom, indeed, that a roadway can be arranged through an estate of moderate size without some artificial planting, and the duty of the road designer then is to design his work so that any artificiality in the surroundings be covered up.

The nature of the roadbed, its width, its physical properties, in a word, have also a part in the esthetic effect of the road, but these elements are comparatively subordinate to the roadside planting in considering esthetic results. The roadway is, of course, utilitarian in its purpose, but its value is so greatly heightened by esthetic treatment, and the more especially by esthetic border design, that the immediate surroundings are chiefly responsible for the final effect.

Glimpses of two roadways in the estate of E. A. Sperig, Esq., in Paterson, N. J., are shown on page 30.



NOVELISTS AS HOUSE FURNISHERS.

A DAILY paper has dug out some descriptions of household furnishings by popular novelists which are of more than passing interest. Charlotte Brontë, it says, has described some charming rooms in *Jane Eyre*, and in *Shirley* George Eliot drew alluring pictures of houses as well as of landscapes, and, to come to more modern writers, Henry James, John Oliver Hobbes, Alice Meynell, George Moore, J. M. Barrie, Henry Harland, and most of the other favorites of to-day have made the readers sigh with satisfaction or envy when reading their descriptions of houses. Mrs. Humphry Ward has described some beautiful rooms and Netta Syrett in her *Magic City* fills us with the desire for the old-fashioned chintz and the spindle legs so delicately reminiscent of our ancestors. Frank Norris pictures for us a perfectly white room, in which the red head of its owner makes the only touch of vivid color.

MR. HENRY JAMES.

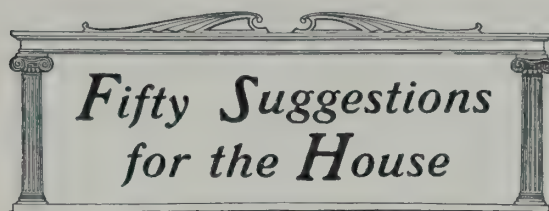
Henry James dwells upon his conception of beauty in the house. Speaking of Poynton, he describes its effect upon a person with flair, with a subtle mind: "Wandering through clear chambers where the general effect made preferences almost as impossible as if they had been shocks, pausing at open doors where vistas were long and bland, she would, even if she had not already known, have discovered that Poynton was the record of a life. It was written in great syllables of color and form, the tongues of other countries and the hands of rare artists. It was all France and Italy, with their ages composed to rest. For England you looked out of old windows—it was England that was the wide embrace. While outside, on the low terraces, she contradicted gardeners and refined on nature, Mrs. Gereth left her guest to finger fondly the brasses that Louis Quinze might have thumbed to sit with Venetian velvets just held in a loving palm, to hand over cases of enamels and pass and repass before cabinets. There were not many pictures—the panels and the stuffs were themselves the picture; and in all the great wainscoted house there was not an inch of pasted paper."

On the subject of doors and windows Henry James is severe and definite. "Mrs. Gereth hated the single plate of the windows, the one flat glass, sliding up and down. . . . On the subject of doors Mrs. Gereth had the finest views; the thing in the world she most despised was the meanness of the single flap. From end to end at Poynton there were high double leaves. At Ricks the entrances to the rooms were like the holes of rabbit hutches." The loud note is always distasteful to this novelist. "It was faded and melancholy, whereas there had been a danger that it would be contradictory and positive, cheerful, and loud. The house was crowded with objects of which the aggregation somehow made a thinness and the futility a grace, things that told her they had been gathered as slowly and as lovingly as the golden flowers of Poynton."

MR. J. M. BARRIE.

J. M. Barrie says in one of his stories: "We passed on to the drawing-room. I forget whether I have described Mary's personal appearance, but if so, you have a picture of that sunny drawing-room. My first reflection was, how can she have found the money to pay for it all, which is always your first reflection when you see Mary herself a-tripping down the street. The floor was of a delicious green, with exquisite Oriental rugs; green and white, I think, was the lady's scheme of color—something cool, you observe, to keep the sun under. The window curtains were of some rare material, and the color of the purple clematis; they swept the floor grandly, and suggested a picture of Mary receiving visitors. The piano we may ignore, for I knew it to be hired, but there were many dainty pieces, mostly in green wood, a sofa, a corner cupboard, and a most captivating desk, which was so like its owner that it could have sat down at her and dashed off a note. The writing paper on the desk had the word Mary printed on it, implying that if there were other Marys they did not count. There were many other oil paintings on the walls, mostly without frames, and I must mention the chandelier, which was obviously of fabulous worth, for she had encased it in a holland bag."

And afterward he found that she had herself painted the floor, made the rugs and curtains from remnants, the couch from packing cases, the desk from three orange boxes!



6. INTERIOR WOODWORK.

ARTISTIC interiors do not depend, as so many seem to think, on elaborate and highly finished woodwork and ornamentation. In fact, more houses are ruined by too much ornament than by too little; consequently, we would do well to be guided somewhat by the Japanese in the treatment of our homes. Simple wall treatment of plain, subdued colors, which we can approach in our plain papers, is altogether admirable. If ornament must be had, let it be very small in quantity and very good in quality. In the treatment of the woodwork of our rooms we would do well to take another lesson from the Japanese. In section it is simple in the extreme—usually flat, thin bands, designed to show the grain, which the Japanese accent by eating out the soft parts with acid or fire, and never cover with coat after coat of varnish or paint to hide its beauty, as we do. There is nothing more beautiful than an open-grained or large-figured wood, like chestnut, cypress, or even hemlock, without a filler or paint, merely sandpapered to a smooth surface and waxed to bring out the grain. Such woods are sometimes stained to suit the color scheme.—William L. Price.

7. A BEDROOM ARRANGEMENT.

THE head of the bed goes against the blank wall, with the night-table beside it. At the foot of the bed is the couch, facing the fire, one end being toward the window. To the right of the couch, in the side nearest the window, is the reading table, with its books, flowers, and work-basket. A low chair stands by this table; another chair is at the end of the couch. In this way all the movement of those who enter the room is from the bed and toward the fireplace, the living part of the room being in front of the fire, between the couch and chairs. Even the lights for reading have been arranged to make this concentration of interests possible. The writing table is between the fireplace and the window, which arrangement permits the light to fall over the left shoulder. To balance this table, on the other side of the fireplace is a tall chiffonier. Between each of the windows are dressing-tables, one being reserved for the chair, the other for the last touches of the toilette, the putting on of the hat, and so forth. Between the two doors is a high chest with drawers below, and shelves protected by doors above for the bonnets. On the door leading into the closet, and completely covering it, is a mirror with beveled edges and no frame.—Lillie Hamilton French.

8. THE SUCCESSFUL ROOM.

IN vain do we seek to make a room look beautiful by the elaboration of its decorations and furniture, irrespective of all that goes to make up the life that will be lived in it. The successful room is the one which looks well with all the life in it, not the one which looks its best before it is occupied. It is only by making proper allowance for this life that a living room can be made to look well. Great simplicity is needed in the treatment of a room which may so soon become crowded and restless; but which may also, if properly treated, be more charming and homelike than any other, just because it is so full of life and the evidences of life—a decoration after all by no means to be despised.—Raymond Unwin.

9. WARM-AIR RADIATORS.

IN the use of warm-air furnaces it is often extremely difficult to heat rooms located at a distance from the furnace, rooms that are without any means of ventilation, or rooms which are greatly exposed to outside winds. This difficulty may be sometimes overcome by using a warm-air radiator placed over the outlet of the furnace pipe, which must be in the floor. These radiators are made of sheet steel, and are so constructed that they set up a circulation of air in the room which tends to draw the air from the furnace. They somewhat resemble a direct-indirect steam-radiator.—Frank E. Kidder.

DIAMOND GLASS CEMENT.

A FRENCH recipe for diamond glass cement is as follows: Dissolve 100 parts of fish glue in 150 parts of 90 per cent. alcohol, and add, with constant stirring, 200 parts of powdered resin. This cement, it is noted, must be preserved in absolutely tight-closing bottles, as it solidifies very quickly.



SHADES AND SHADOWS.

ARCHITECTURAL SHADES AND SHADOWS. By Henry McGoodwin. Boston: Bates and Guild Co. 1904. Pp. 118. Price, \$3.00.

MR. MCGOODWIN, who is instructor in architecture in the University of Pennsylvania, has produced an interesting book on architectural shades and shadows, which contains some novel points. Its purpose is described as twofold: first, to present to the architectural student a course in the casting of architectural shadows, the expositon of which shall be made from the architect's standpoint, in architectural terms, and as clearly and simply as may be; and, secondly, to furnish examples of the shadows of such architectural forms as occur oftenest in practice, which the draftsman may use for reference in drawing shadows, when it is impracticable to cast them. The latter feature is likely to give the book immense vogue in these days of hardworking architects on the lookout for anything which will lighten their tasks. It is a good point to make, however, and the book well deserves success. The problems naturally advance from the simple to the complex, and are presented with great clearness and directness. It is a valuable contribution to a subject difficult to present without the personal word of the teacher.

HOUSE AND HOME.

HOUSE AND HOME. A Practical Book on Home Management. By May Elizabeth Carter. New York: A. S. Barnes & Co. 1904. Pp. 271. Price, \$1.00 net.

MISS CARTER has, apparently, very little use for the architect. "The question of cost," she says, "must be kept closely in mind in dealing with architects and builders." A truer sentence was never penned; but the author immediately proceeds: "While they are trained for this work, they are liable to errors of judgment. They may be disposed to be lavish in their expenditures and not so careful in regard to the expenditures of the money of others as they would be with their own!"

A more monstrous charge was never brought against a thoroughly honest profession, a profession which banks on its integrity, and which must do so or utterly fail of reason for its being. One is not surprised, therefore, to read further, that "The especial weakness of architects is shown in an undue concern for what they term the architectural line. To that they often sacrifice the interior comfort and good ventilation of a house. Therefore those who leave the planning of their houses entirely to an architect usually find cause later to regret their exceeding trustfulness, and if they can afford the extra outlay are apt to spend several years and considerable money in making necessary changes to correct serious faults in the new home."

It is impossible to regard seriously a book which begins with such distorted notions of the architect and his work. Miss Carter either has had no experience whatever with architects, or she has been so badly advised in her intercourse with them that she imagines her own personal experiences to fit the entire profession. This is the more to be regretted since the subject of her book is an attractive one, and a well meant effort has apparently been made to produce a work of practical value. The range of topics treated is extraordinarily wide, embracing everything relating to a house from a warning lest your chimney fall down and kill you in the night—as happened in a case cited—to the kind of books one should have. The latter chapter is hardly needed, for if one does not feel the need of a Bible or a set of Shakespeare he is hardly likely to search a handbook for advice on this topic. The book forms one of the series entitled "The Woman's Home Library," edited by Mrs. Margaret E. Sangster.

THE TREE DOCTOR.

THE TREE DOCTOR. A Book on Tree Culture. By John Davey. Akron: The Saalfeld Publishing Co. 1904. Pp. 88. Price, \$1.00.

THIS is a thoroughly serviceable book, written by an expert who has made trees the study of a lifetime. It treats of tree diseases and their cures. It abounds in useful, practical information. The author regards careless and indifferent treatment as the chief causes of diseases in trees, and pleads earnestly for special treatment of them at all stages of their growth. He illustrates, both by text and illustrations, how diseased fruit is often caused by diseases in the structure of trees. The book has nearly 175 illustrations.

Sanitation

ON BOILING WATER.

TRULY, in the good old days, there may have been more disease, but surely there was less occasion to doubt the suggestions of specialistic advice. Probably no one factor connected with modern sanitation has been more frequently insisted on in season and out of season than that all drinking water of uncertain origin should be boiled before using. In fact, so far has this advice been pushed that there are no doubt many persons who have been brought to believe that all drinking water should be boiled in order to ensure the utmost safety. Yet here comes a Paris physician who says that it is all wrong to boil drinking water, as the municipal doctors direct when there is danger of a typhoid fever epidemic. Professor Charrin, of the College of France, is the learned authority who is quoted as denouncing the popular theory that, the fever germs being destroyed by cooking them well, the danger of sickness is avoided. Professor Charrin's doctrine is that in boiled water not only is the deadly microbe destroyed, but also the microbe which even more than the dog or horse deserves to be called the friend of man. The beneficent microbe is that which assists at the digestion of such substances as cellulose and albumen. If he is boiled out, these intractable substances set up irritations which end in enteritis and other maladies. Another eminent French authority, M. Pages, agrees with M. Charrin in saying that boiled water seriously impedes digestion, and attacks the assimilative organs. "It may," he says, "save you from typhoid, but the risk of typhoid is in any case very small, while if it does save you, it exposes you to a host of other ailments no less mischievous." "If you do boil drinking water," says M. Pages, "expose it before you drink it for some hours to the open air, and agitate it." This, it has been wickedly suggested, is probably to let the microbes all in again.

VENTILATION.

VENTILATION, says Robert Bennett in the Canadian Architect, is a term applied to the method by which a due supply of fresh air is maintained in buildings and other confined places.

The word was invented about 200 years ago by Dr. Desaguliers, a well known scientific man of that time, who devoted a great deal of time and money and skill toward improving the sanitary conditions of buildings, which at that time were considered very bad. He invented a "fanning wheel," or, in other words, an "air propellor," which was worked by manual power, and the man who worked it was called the "ventilator." The word has since been divorced from its original meaning, and is now used to signify an opening in a building through which air may, or may not, pass, according to circumstances.

Everybody knows that a fresh supply of air is necessary for all living things, even for plants and vegetation. To cover the head with a cloth for a short time produces a sense of oppression, and on its removal a feeling of relief is experienced. The heat of the person's breath causes oppression. People often say of a crowded building "it is too hot," whereas the discomfort is caused chiefly from the impurity of the atmosphere.

Dwelling houses, too, suffer from lack of proper ventilation. It has often been remarked that we are apt to prize but lightly what we possess in abundance, and it is a fact that cannot be denied that the two most important foods on which human life depends, viz., pure air and pure water, are by the great majority of us least esteemed. These two foods, more especially the former, are so abundant that we need pay very little attention to obtain them. We should recognize the importance then of supplying every building and habitual dwelling with proper ventilation. In thousands of houses in our great cities the most elementary principles of ventilation are systematically ignored.

People who would take the greatest care not to drink polluted water, are yet careless of breathing impure air, and seem to forget that one may be quite as dangerous as the other—personally I am of opinion that impure air is really more dangerous than impure water, since the air is taken directly into the lungs and comes in contact with the blood more speedily than water which enters the stomach. I do not propose to write with medical authority at all, but simply from a little observation of my own. I believe that ventilation is an exact science, admitting of exact results, and everybody should be induced to believe the fact that bad air is detrimental to health.

The Automobile

THE MOTOR HOUSE.

NOTHING of a temporary nature should be deemed good enough for the stabling of a motor car. Wood and corrugated iron buildings, whether portable or fixed, are both unsuitable for the purpose, warmth, dryness, and approximate equality of temperature being of first importance in the preservation of a car. It is a poor policy, says B. Wyand in the Builders' Journal, to risk the well-being of a vehicle costing thousands in order to save a few dollars on the structure in which it is to be housed, and beyond this there is the question of personal safety, which may be seriously imperiled in consequence of the rusting of parts of the machinery or the action of damp upon the fabric of outer covers and the rubber of inner tubes.

The walls internally may be finished with struck-jointed brickwork or they may be plastered; but the best finish is, of course, given by some form of tiling, with a dado of enameled bricks for the harder wear in the lower portions of the walls. Roofs should be boarded and felted and should, if possible, have neither rooms nor loft above, so that plenty of top light may be obtainable.

Steel-hinged wood revolving-shutters should form the entrance, as with these there is no danger of damaging the car by the swinging of a hung door in a heavy wind. The doors, if sliding, must run on an overhead track, and all framing should be inside, with flush boarding outside to throw off the wet. A paved approach laid to an easy fall leads to the stone entrance sill, which is on the level of the finished floor surface and about six inches above the level of the surrounding ground.

The chief figure which distinguishes the motor house from every other building is the planning of the floor, and it is in regard to this that great care must be exercised. Whatever the size of car to be housed, a pit must be provided for cleaning and inspection purposes, and it is advisable in the case of a double motor house to have two pits, one for each car, so as to avoid the frequent changing of position which would otherwise be necessary. A single pit should be not less than 3 feet wide and 4 feet 6 inches deep. Length will depend upon the size of car; but it would be as well to anticipate a little and make it, say, from 9 to 12 feet—the latter size being the maximum requirement for any make of private car. The pit may be brick built with rendered faces, and with floor finished as the floor of the house, and no care or expense should be spared to render it thoroughly watertight. The drain will discharge outside over a trapped gully, with small inspection pit built up, or an ordinary siphon-pipe with extra inlet carried to ground level may satisfy local requirements. Around the pit is laid a 7 by 5 inch hardwood curb, securely fixed to the brickwork of the walls, the curbs laid in the direction of the length of the pit being rebated to receive the movable covers. The curbing should be laid so as to be 4 inches above ground level, as otherwise there is a danger of the car mounting the curb and sustaining serious damage by a fall into the pit. Pit-covers are best made in small light sections, so as to be easily moved, and they must be strongly framed and provided with flush handles for lifting. Step irons should be built into the brickwork of the pit for access purposes.

The floor itself may be formed of any non-slippery, impervious and hard-wearing material—aspalt or tiles for preference. Around the pit a 4 inch glazed stone-ware channel is laid flush with the floor and butting against the wood curbs, and the floor is best made to fall in every direction to these channel pipes, which discharge eventually in the open over a trapped gully. With raised curb and the channels no trouble can arise from water finding its way into the pit.

Lighting and heating are matters which require more or less special consideration in each case. I have mentioned the importance of plenty of light; in fact, the simplest way is to "pier" the walls and fill in with solid frames and casements, having small top lights to open for ventilation in addition to the casement sashes themselves, which may all be stayed open in favorable weather. The roof-lantern will afford constant ventilation in practically all weathers. Heating is a necessity, whether by hot-water pipes, radiators, or open fires—the selection being left to the judgment of the architect, upon a consideration of the most suitable system. The life of a car is very much prolonged by housing it in a warm, dry, equable atmosphere. Artificial lighting is another matter which must be regulated by local facilities; to discuss it here would be a waste of space.

The Plumber

NEW BATHROOMS IN OLD HOUSES.

THE Metal Worker prints some experiences of a practical plumber in building and arranging new bathrooms in old houses where none had existed. The first case was in a farmhouse. The owner wanted more comfort. He came to the plumber to know the cost of plumbing, dimensions, etc.; said he would have to do something to the house, as it was not built for a bathroom, and the fear of building costs had long deterred him from concluding. After looking the house over, the owner was asked if they could give up two closets to the rear second floor chambers and use portable wardrobes instead. They could. They were advised to do no building at all. The plumber knew best just what was necessary to accommodate the fixtures and would bring his own carpenter, who was familiar with work for plumbers. He would take out the partition between the closets, change an alcove in the adjoining bedroom into a hallway, close the closet door holes, and use one of the doors at the hallway, putting in a high square window to light the room, for \$45 extra. This was cheap and easy, and the farmer knew it.

He was then advised that, being away from town, repairs would be expensive and it would be best to spend the money saved in building for the best of plumbing goods and the most careful installation of the work. He did. When the plumber left the premises, there was a substantial bathroom, a tank in the attic, a force pump and sink in the kitchen, and hot and cold water to all the fixtures. The drainage was carried to a ravine 1,200 feet away. The bill was \$780.

Another example was a frame house, with an outside flight of entrance steps carried along the living-room wall; the steps entered a hall and library. The house was built on a small city lot adjoining an alley. The house wall was extended along the alley line $8\frac{1}{2}$ feet, and then over to the living-room wall. The living-room wall was torn out from this point to the main house and a new wall set up to gain width. A closet in the living-room was practically thrown into the bathroom, as a means of entering from the living-room. A door was substituted for the window in the library wall and the frame set 4 inches farther from the corner. This gave access from other parts of the house. A square high window was set in the alley wall of the library to offset the loss of light caused by making the bathroom. This room came directly under the outside steps. Part of the ceiling was made 9 feet high, but the stairs demanded a slant roof and the lowest point of the slant part of the ceiling, at the back of the bath, is 5 feet from the floor. A tank was put in the loft of the living-room, and water supplied from a large cistern holding 450 barrels, by a force pump in the cellar. The drainage was carried to a vault at the rear of the yard. Altering the building was charged at \$70, about the real cost, but the plumbing profit was enough to justify throwing in the alterations.

Another example was a modest home in the outskirts of a city when it was built. It was constructed of brick on a small lot. Half the thickness of the dining-room wall was cut away, one-third of part of the living-room wall, a door was put in place of the window, and a warm frame addition was built with the studding turned the flat way. A high window with cathedral glass was put over the bath, to add to the good appearance of the room, and a skylight, with ventilator, was placed in the roof to do the real lighting by day. The building work amounted to \$80, with small profit, and the plumbing footed up to \$380.

Three closets on the third floor of a frame residence afforded the only available space for a second bathroom, which was needed badly. Two closet partitions were removed to make the room, and a corner closet was built in each bedchamber. The old closet doors were used in opposite rooms to make them open without alteration. The hall door frame was moved 4 inches and the door hung on the inside. The original casing of the frame was narrow. Broad casing was used instead, set well back on the jambs, to avoid plastering and papering in the hall. In this case the bathroom floor was made 6 inches higher than the nouse floor, for convenience in placing the under floor pipe properly. Light was obtained by a skylight in the roof, with flaring walls to the ceiling of the bathroom. The actual building cost was \$60, but the bill did not mention it. The bill merely stated: "To installing third story bathroom, \$340."

New Building Patents

The following list of New Patents relating to Building and Sanitary Science is prepared expressly for the SCIENTIFIC AMERICAN BUILDING MONTHLY by MUNN & Co., Solicitors of American and Foreign Patents.

A PRINTED COPY of the specification and drawing of any patent in this list, or any patent in print issued since 1863, will be furnished from this office for 10 cents, if exact date or number is furnished. Remit to MUNN & Co., 361 Broadway, New York.

BRICK, STONE, AND TILE.

ARTIFICIAL STONE BUILDING BLOCK.	E. L. Brownson, Havana, Cuba.	December 13	776,721
COMPOSITION FOR PAVEMENTS.	E. I. Allison, Saginaw, Mich.	December 13	777,173
ARTIFICIAL STONE.	J. C. McClenahan, Wilmington, Del.	December 13	777,387
BUILDING BLOCK OF CRYSTALS.	A. Biberfeld, Berlin, Germany.	December 13	777,589
BUILDING BLOCK.	Ferguson and Kissell, Long Island City, N. Y.	December 20	778,024
BUILDING TILE.	P. J. McGuire, Blairsville, Pa.	December 13	778,598

CARPENTRY.

WINDOW.	Brennenstuhl and Silkin, Boston, Mass.	December 6	776,721
WINDOW.	C. Baler, Rottwell, Germany.	December 6	776,983
ROTATING DOOR.	S. M. Cole, Anamosa, Iowa.	December 6	777,003
WINDOW WITH SLIDING SASHES.	P. Kupelwieser, Brioni, Austria-Hungary.	December 13	777,347
FLEXIBLE DOOR.	Dodge and Miller, Chippewa Falls, Wis.	December 27	778,228
WINDOW SASH.	Patten and Lippy, Mansfield, Ohio.	December 27	778,370
WINDOW CONSTRUCTION.	E. H. Lunken, Cincinnati, Ohio.	December 27	778,456
WINDOW.	T. J. and H. G. Carl, Chicago, Ill.	December 27	778,565

CONSTRUCTION.

TILE ROOF.	W. C. Mitchell, St. Louis, Mo.	December 6	777,058
ROOF ANCHORING DEVICE.	W. Small, Dallas, Texas.	December 13	777,441
TENT COTTAGE.	J. E. Parks, Denver, Col.	December 13	777,531
SYSTEM OF METALLIC GIRDERS FOR STRUCTURES OF CEMENT, CONCRETE, OR THE LIKE.	G. A. Parent, Paris, France.	December 20	777,742
BARN CONSTRUCTION.	J. J. Duttweiler, Findlay, Ohio.	December 20	777,945
REINFORCED CONCRETE.	E. B. Jarvis, Toronto, Canada.	December 27	778,247
FRAME FOR PLASTIC BEAMS.	R. C. Kyle, Columbus, Ohio.	December 27	778,416
CONCRETE CONSTRUCTION.	F. Melber, Ross Township, Pa.	December 27	778,422
MOLDING FORM FOR CONCRETE WALLS.	E. B. Jarvis, Toronto, Canada.	December 27	778,583
CONSTRUCTION OF WALLS, ETC.	J. Kulhanek, Prague, Austria-Hungary.	December 27	778,589

ELEVATORS.

ELEVATOR SAFETY CLUTCH.	A. Whelan, Pittsburg, Pa.	December 13	777,166
SAFETY ATTACHMENT FOR ELEVATORS.	A. Matter, Connelville, Mo.	December 13	777,296
AUTOMATIC DANGER SIGNAL FOR ELEVATOR GATES.	C. T. Eaton, East Somerville, Mass.	December 13	777,612
OPERATION OF AUTOMATIC VALVES OF ELEVATORS.	K. E. O. Jansson, Worcester, Mass.	December 13	777,636
ELEVATOR LOCK.	R. J. Roulo, Los Angeles, Cal.	December 27	778,550
ELEVATOR SAFETY CLUTCH.	A. Whelan, Pittsburg, Pa.	December 27	778,616

FIREPROOFING AND FIRE EXTINGUISHMENT.

FIREPROOF CONSTRUCTION.	W. A. Kennedy, Washington, D. C.	December 6	776,916
AUTOMATIC FIRE WINDOW.	Schwing and Yunker, Newark, N. J.	December 6	776,948
FIRE DOOR OR SHUTTER.	H. T. Moody, Newburyport, Mass.	December 13	777,300
INCLOSED OR TOWER FIRE ESCAPE.	Ballinger and Perrot, Philadelphia, Pa.	December 13	777,648
AUTOMATIC FIRE EXTINGUISHING APPARATUS.	J. Fiddes, Aberdeen Scotland.	December 20	777,888
FIREPROOF SHUTTER.	F. P. Schroeder, Jersey City, N. J.	December 27	778,279

HARDWARE.

AUTOMATIC WINDOW CLOSER.	H. C. Smith, New York, N. Y.	December 6	776,559
SASH GUIDE AND METAL WEATHER STRIP.	W. H. Scholes, Allegheny, Pa.	December 6	776,621
DOOR BRACE.	F. Dahlund, Esmond, N. D.	December 6	776,892
DOOR HOLDER.	F. W. Kuppman, Philadelphia, Pa.	December 6	776,946
ADJUSTABLE SASH FASTENER AND TIGHTENER.	N. S. Hillyard, St. Joseph, Mo.	December 13	777,099
DOOR OPENER AND CLOSER.	W. A. Fagan, San Francisco, Cal.	December 13	777,193
HINGE.	J. A. Wells, Battle Creek, Mich.	December 13	777,230
LOCK.	Alrutz and Werner, Charlottenburg, Germany.	December 13	777,271
SASH FASTENER AND BURGLAR ALARM.	B. T. Kavanaugh, Chicago, Ill.	December 13	777,344
DOOR CHECK AND CLOSER.	J. Bardsley, Montclair, N. J.	December 13	777,393
DOUBLE ACTING SPRING HINGE.	O. E. Hallin, Minneapolis, Minn.	December 20	777,673
LOCK.	J. H. Dierlinger, Bridgeport, Conn.	December 20	777,885
WINDOW OR SASH FASTENER.	S. S. Bell, Reading, Mass.	December 20	778,000
WEDGE SASH FASTENER.	S. S. Bell, Reading, Mass.	December 20	778,001
SASH FASTENER.	J. D. Sanford, Winchell, Texas.	December 27	778,276
LOCK.	W. R. Tabb, Brooklyn, N. Y.	December 27	778,284
SASH LOCK.	W. L. Hall, Spokane, Wash.	December 27	778,312
WINDOW SASH SUPPORT AND LOCK.	J. L. Sumner, Bayard, Iowa.	December 27	778,385
SEPARABLE HINGE.	G. H. Schiek, Joliet, Ill.	December 27	778,509

HEATING AND VENTILATION.

STOVEPIPE AND DRUM RADIATOR.	J. H. Green, Jackson, Mich.	December 6	776,589
VENTILATOR.	M. L. Budd, Westerville, Ohio.	December 6	776,642
VENTILATING SYSTEM.	C. H. Casper, Newark, N. J.	December 6	776,888
RADIATOR.	W. Leek, Vancouver, Canada.	December 6	777,036
HEATING AND VENTILATING SYSTEM.	P. K. McMinn, Chicago, Ill.	December 13	777,127

SHEET METAL RADIATOR.	W. R. Kinnear, Columbus, Ohio.	December 13	777,289
HOT WATER HEATING APPARATUS FOR BUILDINGS.	A. H. Freericks, Cincinnati, Ohio.	December 20	777,894
VENTILATOR FOR STORM WINDOWS.	P. G. Webber, Stoneham, Mass.	December 20	778,160

MISCELLANEOUS.

COVERING FOR WALLS AND CEILINGS.	H. G. Dieterich, New York, N. Y.	December 13	777,334
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PLUMBING.

FLUSHING BOX FOR CLOSETS.	H. Aird, Troy, N. Y.	December 6	776,481
LAVATORY.	W. H. Lloyd, Chicago, Ill.	December 6	37,256
BATH TUB.	W. H. Lloyd, Chicago, Ill.	December 6	37,257
SELF-CLOSING FAUCET.	W. Webber, New York, N. Y.	December 20	777,872

TOOLS.

SIDING OR FLOOR CLAMP.	H. W. Weckman, Canton, Ohio.	December 6	776 575
FOLDING SQUARE.	H. T. Buhmeier, Elgin, Ill.	December 6	776,996
LEVEL.	P. M. Walsh, New York, N. Y.	December 13	777,165
SOLDERING IRON.	A. A. Ackerman, Chicago, Ill.	December 20	777,711

PUBLICITY FOR MANUFACTURERS OF BUILDING MATERIAL AND SUPPLIES.

THE local or traveling representative has always seemed to me the real life and blood advertisement of the firm he represents, and no personal letter, printed circular, blotter, calendar, or souvenir can take his place.

I speak from experience as a draftsman, architect, and publisher, on personal acquaintance with many of the leading manufacturers and architects of the United States and the publishers of nearly all the architectural magazines and trade papers.

But letters, circulars, and advertising literature are necessarily accompaniments to these representatives, and it is in regard to this part of publicity that my statements will be confined.

An architect has ever been a different business proposition from any other man in any other profession, trade, or walk in life.

He may be led to the trough, but you can not make him drink.

He may be reasoned with, but never forced to any conclusion.

His impressions are early formed and difficult to change.

Your name once firmly engraved on his specification reminder, it will remain in most cases for time to come.

What was law and gospel in the office where he traced his way to fame is good enough for his own office.

But it is needless to elaborate his distinguishing characteristics, only they must be considered in the preparation of catalogues, price lists, announcements or printed matter of any character.

An announcement that would appeal to a banker or broker would fall very flat to the average architect.

In regard to printed matter of any kind, unless attractively compiled, printed on good stock and the illustrations carefully selected, well engraved, and properly printed, your money has been wasted.

And this brings me to the importance of having your announcements in the architectural magazines attractively set. These advertisements are only circulars or announcements mailed every issue to the subscribers among the architects, but they are watched even more carefully than you even imagine.

Because the architectural magazine advertisements do not bring the statement, "I saw your ad in the —," do not infer that your money is being thrown away. It is one of the peculiarities of the architect that he would not mention the name of the publication.

This is true also of the contractor and smaller supply houses, who even avoid the use of the key.

But it is the persistency of circulars, announcements, and advertisements, backed by attractive arrangement, that counts. The draftsman of to-day is the architect and engineer of to-morrow. You must cast your bread on the water of the present for the business of the future.

It always seemed strange to me that, knowing the architect's fondness for pictures, they are not more liberally used in your announcements, and that the bare cards are allowed to run month after month, year after year, in the different journals without change. The publisher is anxious to improve the appearance of his paper and gladly welcomes the new life and interest evidenced by attractive advertising copy. The architectural paper by its news items and articles keeps you posted as to what the best men are doing.

The architects watch it and read it to see what the other fellow is doing.

Concentrate your efforts for new goods and materials on those who are busy.

Strengthen your statements with testimonials and tests.

The busier you get, advertise the more. Then, should a dull season come, you will hold on where others fall.—The St. Louis Builder.

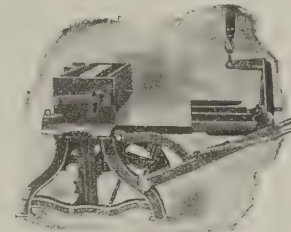
Publishers' Department

NORMANDIN CEMENT BLOCK MACHINES.

THE St. Louis Daily Globe-Democrat's recent charge in reference to the Normandin Cement Block Machine has been withdrawn by that paper in its issue of Friday, December 9, 1904. The recall of its original assertion is prominently placed, gracefully stated with its usual fairness in such matters, and does a final act of justice to the well known manufacturers of the apparatus in question. It reads as follows:

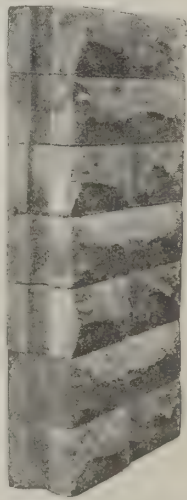
"Injunction Was Not Issued Against Normandin Machines.—The Globe-Democrat having recently published a statement to the effect that an injunction had issued against the Normandin Cement Block Machine, desires to retract this statement in full. We were misinformed as to the character of the suit and the parties affected by it, and in justice to those concerned wish to say that the proprietors of the Normandin machine were not named as parties to the litigation referred to, nor was the Normandin machine referred to therein. Our mention of this machine in connection with the proceedings was a mistake, which we cheerfully correct."

The esteemed Globe-Democrat has been imposed upon. That there was no ground for the statement in



BLOCK MACHINE.

relation to an injunction issued against the machine has been shown by the careful and diligent search of the records of the United States Circuit Court and the United States District Court at St. Louis, Mo., by the clerk of above Circuit Court, Mr. James R. Gray. Through him we find that no suit had ever been instituted or commenced by a certain Eastern hollow concrete building block company against the Cement Machinery Company, of Jackson, Michigan, in either court, and that no writ or injunction or other process had ever been issued out of the above courts in favor of the Eastern company against the Western. Neither was there any record in such courts of any proceedings or suits of any kind having been commenced by the Eastern company, expressly charging or alleging that any particular block machine, or any part of the parts or devices of any particular block machine, are infringements upon any patents or rights of the machine of the Eastern company. The illustration given herewith shows a Normandin block machine. Hundreds of these apparatus for making hollow concrete building blocks are in operation throughout this country and Canada, and the enterprise is permanent, profitable, and rapidly extending. The next illustration represents the hollow concrete blocks made by the machine. They sell in close touch with lumber, as they are used for residences, factories, stations, churches, and many important structures. The machine is quick and easy in its work, and unsurpassed for the proper equipment of leading lumber firms.



HOLLOW CONCRETE BUILDING BLOCKS.

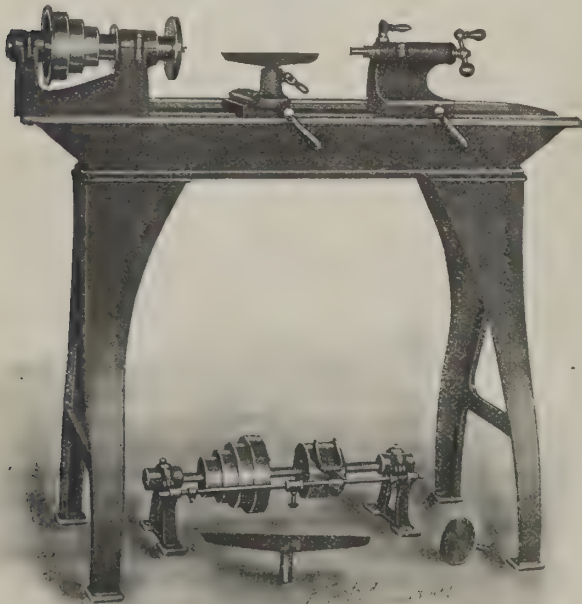
SUBLIMED WHITE LEAD.

IN the manufacture of sublimed white lead large furnaces of special construction are used. The furnace charge containing the lead charge is burned at such a high heat that it volatilizes and is burned to a white oxy-sulphate. This is drawn by powerful fans through a series of cooling and purifying flues and chambers, where any coarse particles settle, finally reaching the bag room, where the pigment proper is collected, by allowing the air and furnace gases to filter freely through a large number of suspended fabric bags, which retain the air-floated, sublimed, white lead as a pigment of great density, whiteness, and impalpable fineness. The point of vital interest to the consumer is the character of the finished product, and the work it will do. Made as it is from the choicest selection of lead ores of the Joplin district, the composition of the finished product varies within very narrow limits, it being a lead oxy-sulphate, or basic lead sulphate—basic in its character and affinity for oil and smoothness of working. Taking water as unity, the specific gravity is 6.2—51.7 pounds yielding 1 gallon of increase or 100 pounds 1.93 gallons. To

produce a moderately stiff paste or keg lead requires about $9\frac{3}{4}$ per cent., or $1\frac{1}{4}$ gallons, of linseed oil to 100 pounds of dry lead. One hundred pounds of this paste can then be thinned with $5\frac{1}{2}$ gallons of linseed oil to painting consistency. It is air-floated and amorphous; hence easily mixed and ground with oil to extreme fineness, and yet has great density. It is white to start with, and retains its color. Any painting will demonstrate this, particularly when exposed to the fumes from an open sewer or the sulphur-laden city atmosphere. This quality may be quickly tested by exposure for a limited time to sulphureted hydrogen gas. Pound for pound or volume for volume, it has greater density when applied over the same surface, and, when desired, can be brushed or spread much farther, owing to its fineness. It is very fine, and will therefore hold in suspension better, and does not "sand" out when reduced with turpentine for flat interior painting, but can be used to the last drop. Durability is the strong point of this material. Time tells the story, and in hundreds of cases has shown conclusively the great wearing of the lead in not "chalking" or checking. Sublimed lead remains firm and solid, only surface deterioration of the oil taking place, while the coat below remains firm and solid and in perfect condition for repainting. The manufacturers of this lead are the Picher Lead Company, Joplin, Mo., and they have placed the product in the hands of the paint maker knowing that he is conversant with trade needs and situations, and best able to make and grind properly such combinations as are suitable for different classes of work. Sublimed white lead wears away from the surface only, its very slow disintegration being measured by the superficial destruction of the oil. Rain does not penetrate nor wind remove it. Even the surface from which the oil has finally dried out remains to protect the paint beneath, which will be found to persist smooth and flawless. These qualities should be borne in mind when designing a ready mixed paint. Whatever the formula or proportions of each ingredient, the office of the lead will be to give body to the zinc, while correcting any tendency to "craze" and peel.

WOOD TURNING LATHE.

We show in the accompanying illustration the 10-inch "Star" wood turning lathe of a new design which has just been placed on the market. This lathe is admirably suited for use in manual training schools, as it contains many desirable features for such work and is commended to wood turners in general. The rated size of the lathe is ten inches, but it has an actual swing of eleven inches over ways and seven inches over hand rest. The head stock is of the web pattern, strong and solid, has a hollow spindle (with 17-32-inch hole) made from a crucible steel forging, and runs in large phosphor bronze bearings, which are dust-proof and self-oiling, and will run at a high speed for a long time without attention. The spindle is ground true, and the bearings are hand scraped to an accurate fit. The cone pulley has four steps, is turned inside as well as outside and is in perfect balance for high speeds. The tail stock is the curved or cut-under pattern; has a long bearing on the ways and is firmly locked to the bed by a convenient lever which is attached and always in place. No wrench is required. The tail stock spindle is locked by an improved locking device. The hand rest has long and short T-rests. The rest socket and saddle are locked to the bed by a cam locking device, and the T-rest is held in socket by a friction clamp (doing away with the objectionable set screw commonly used), and both are operated by levers attached and always in place.

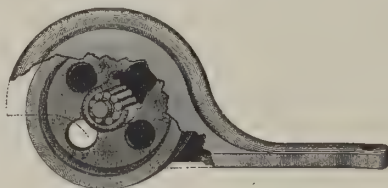


TEN-INCH "STAR" WOOD TURNING LATHE.

Wrenches are not needed. The bed is broad and deep, and, being thoroughly braced by cross webs, is very stiff and rigid, and at present is made in two lengths, four and five feet long. The front way is flat and the back way is V-shaped, the same as the inside ways of the "Star" screw-cutting engine lathe. A convenient shelf is secured to the back of the bed for the reception of tools, etc. The countershaft has self-oiling and self-aligning shaft bearings, four step cone, and tight and loose pulleys, the loose pulley having a self-closing oil cup. The face, plate, screw chuck, cup, and spur centers are furnished with each lathe, and when desired a slide rest for metal turning will be furnished at an additional price. This lathe is manufactured by the Seneca Falls Manufacturing Company, No. 267 Water Street, Seneca Falls, N. Y., makers of the well known "Star" screw-cutting engine lathes for foot or power; and the company will be pleased to send on request a catalogue describing its complete line of machinery for working wood in any manner. Each machine is carefully tested before leaving the factory, and after ten days' trial may be returned at the firm's expense, if not proving satisfactory.

PULLEYS, DRAWER SLIDES, ETC.

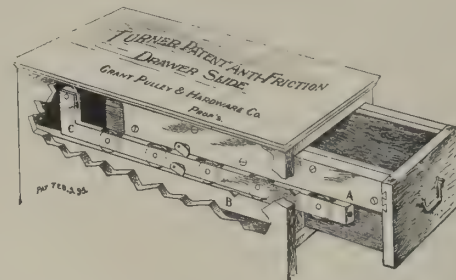
HARDWARE specialties of that class that are important enough to be specified by leading architects, adopted by prominent builders, and protected by United States patents, are manufactured by the Grant Pulley and Hardware Company, of New York. This firm is continually awake to demands for good articles. They are made under the well-known McQueen patents, and are so simple and so practical for the purposes in view that their measure of economy and utility is very firmly established in the trades. For instance, we find that this company has furnished pulleys to the Times Building, Hotel Belmont, New York College, St. Luke's Hospital, in New York; Woman's Hospital, Boston; Annapolis Cadet quarters; Bessemer Building, Pittsburg; Rockefeller Building, Cleveland; and others of similar magnitude. The pulley used is a roller-bearing axle type, and is called the "Grant Overhead Pulley," for use in single, twin, triplet, and quad windows, and is pictured in the accompanying illustration. It is the latest improved overhead pulley. The



ROLLER-BEARING AXLE PULLEY.

housing is made in one piece of iron, and is capable of resisting any load without breaking. The housing connects with the soffit, so that mortar will have no power to clog the wheels. The chain or cord is easily inserted with a mouse, which latter is supplied with all orders. Even for the heaviest plate glass windows iron weights may be used instead of lead, thus materially reducing the cost. The pulleys are cut in the frames with the regular pulley machine. Some advantages of using these devices may be appreciated when we state that they can be employed in segment head window frames; they hang the weight in the center of the boxes in circle window frames; they are concealed from view when the window is closed; only lacquered face pulleys are necessary; they can be easily removed if required, after the trim is placed; and they require eight inches less of pocket room than the side pulleys, and thus an iron weight is usable in many places instead of lead—a saving of from one hundred to two hundred pounds of the heavy metal to each sash. The "Grant Sash Chain" is an article of great time and labor saving capacity, and figures as an important feature of the patented inventions. These bronze metal, steel, coppered, and plain chains are uniform, well proportioned for strength and wear, and are made of the best known materials. They are guaranteed to stand the strain of from three hundred to seven hundred and fifty pounds. The chain fixtures are unsurpassed for simplicity and security. Nails, screws, and hammering are, of course, unnecessary. Another building contrivance very much in favor is the "Grant Window-Stop Adjuster." These adjusters are now almost universally used on all sliding sashes. It is very quickly and conveniently adjusted to the sash; excludes cold air and dust, and prevents the window from rattling. It also claims the advantage of being inexpensive and ornamental. This article is made of bronze or brass, trivance very much in favor is the "Grant Windowing Noiseless Door Sheaves and Flush Track" are suitable for all kinds of cabinet work where sliding doors are used. The track is made so that the door can not jump it, and it also leaves the shelf with a smooth surface, a very desirable feature for jewelers' or druggists' show cases, or butler's pantry, etc. The "Grant Wall Show Case Pulley" is adapted for use especially in show cases as line the walls of a hat store.

Under the case may very conveniently be placed a department of sliding drawers, and this, to be in perfect working order, should be equipped with another very successful article made by this firm and called the "Turner Drawer Slide." This anti-friction drawer slide and support is represented by the accompanying engraving. "A" is the top track, and is screwed to the drawer. "B" is the lower track, and is screwed



DRAWER SLIDE AND SUPPORT.

to the case. "C" is the slide, unattached, and moves with the drawer. It has been used by the leading architects and cabinet-makers for over six years, and gives perfect satisfaction. It is absolutely noiseless, and made of selected maple stock thoroughly seasoned for the purpose. The slide has been furnished, for example, to such buildings as the following: The new Tiffany Building, new Gorham Building, and Brooks Brothers Store, in New York; and the University Club, Philadelphia. It is made to fit any drawer, and is a necessary feature in banks, millinery, hat, or hardware establishments, offices, etc., and representative firms all over the country have adopted it. In ordering a slide and support, give the length inside of drawer front to back of case, and height of perpendicular of drawer front. The company is also the agent for the celebrated Rixson door check, makes all kinds of special pulleys to order, and sells sash chain and fixtures for all pulleys. The address: No. 25 Warren Street, New York, N. Y.

THE International Jury of Awards of the Louisiana Purchase Exposition has awarded to the Berger Manufacturing Company, of Canton, Ohio, a gold medal as a recognition of the merits and artistic beauty of its "Classik" metal ceilings. This company had a booth at the St. Louis Exposition constructed entirely of sheet metal, and displayed to excellent advantage the beauty of the classified designs in metal ceilings and side walls. "Classik" ceilings were originated by the Berger Company, are widely known throughout the building world, and appreciated generally by those who have seen their deeply stamped designs.

ANXIETIES about the result of altering the east front of the Capitol at Washington have drawn from Mr. W. S. Eames, President of the American Institute of Architects, a suggestion that a full-size model of the proposed alteration should be erected. The cost is estimated at \$100,000, and it is thought worth while to go to this expense, although the scheme of the architectural committee's advisers, Messrs. Carrère and Hastings, is presented in the form of a model, and there is another scheme of which a model is also provided. The contention is that a small size model is so completely grasped by the eye that it may mislead as to the actual effect in the case of a large building or one with a limited range of distance for points of view. All architects, no doubt, meet occasionally with unpleasant surprises in their executed work, but the conditions under which the work is done have much to do with that. In the case of the Capitol, the conditions—a complete model to show the design, an existing building to help the eye of the imagination in judging the effect when completed, a stereotyped style which has few surprises for any architect and can have none for the firm advising the committee—make so much for certainty in the present case that it gives an emphasis to this public confession of architects (for Mr. Eames fills a representative place, says the Canadian Architect in commenting on the proposal) that the only result of the high development of architecture during recent years in the United States is to make the profession tread with fear where an earlier generation went confidently on. It is not a stimulating position.

THE artistic success of the St. Louis Fair is a matter on which there is a considerable divergence of opinion, with perhaps a greater tendency to maintain that it has not been so pronounced as it might have been. Certainly a great effort was put forth to eclipse not only every previous exhibition in point of size, but in point of art interest as well. Yet the results fell far short of success. The values of views and vistas were completely overlooked. There was no one central point where the buildings of the Fair impressed one as a magnificent group. There was no grand entrance where the beauty of the grounds was focused, and even the views from the magnificent cascades were closed with ugly features set up without regard to their relationship to this costly feature. These are fundamental matters in the arrangement of such buildings.

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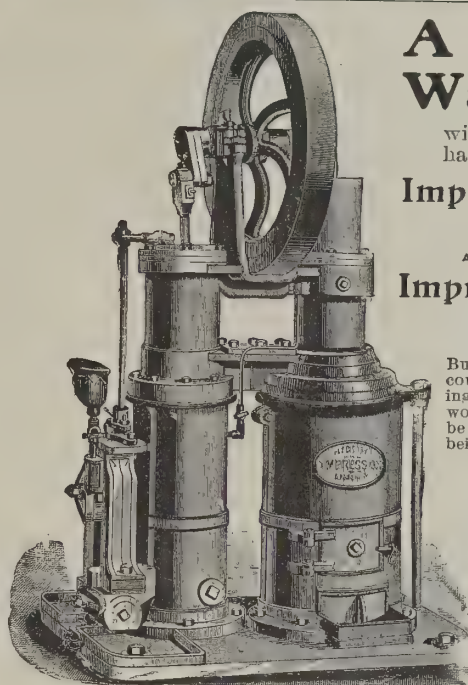
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The Shimer Cutter Head



FIG. 202

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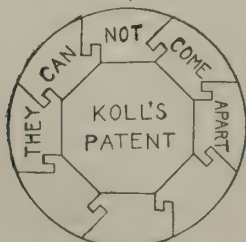
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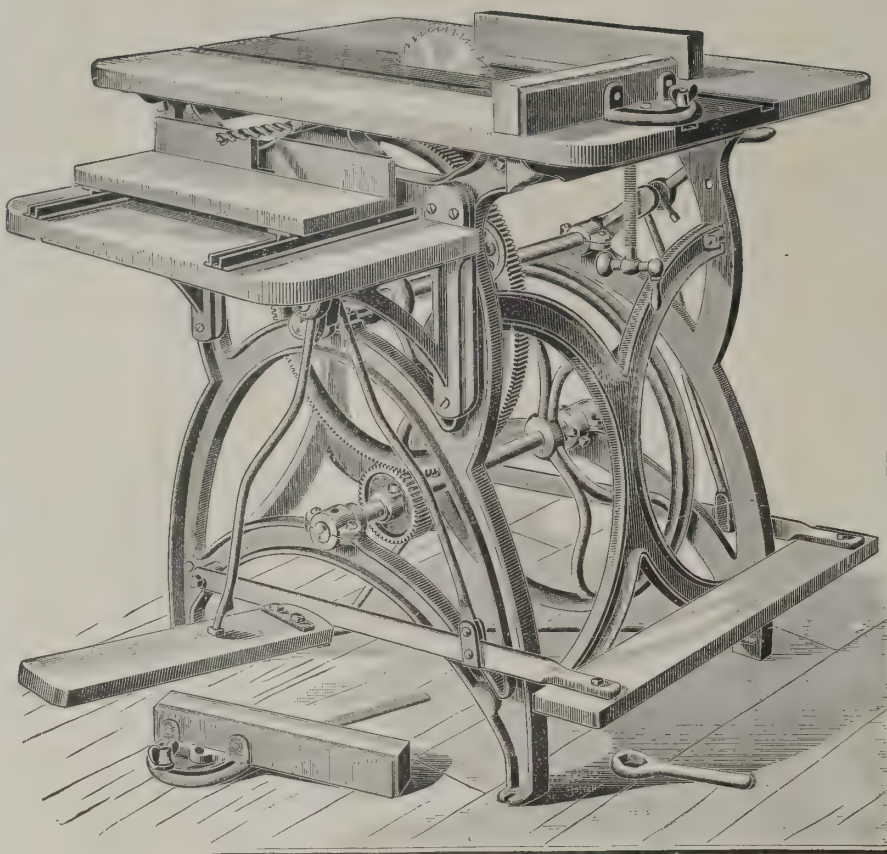
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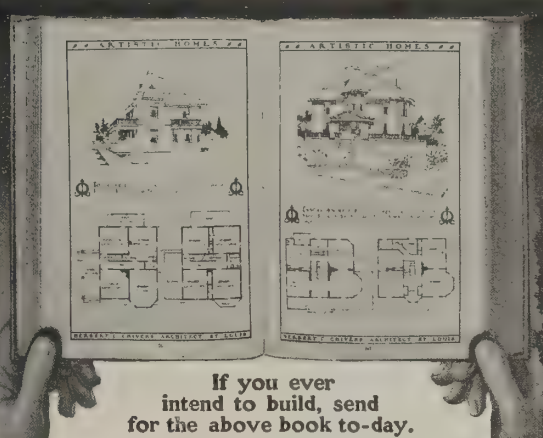
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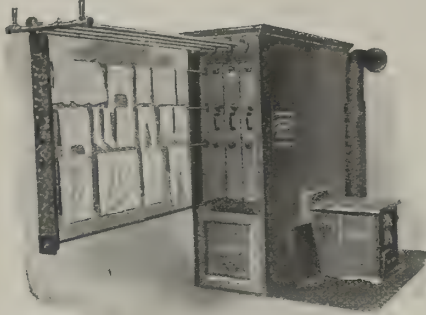
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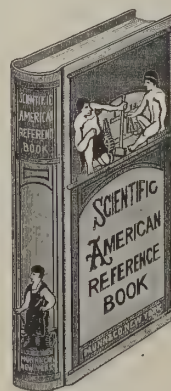
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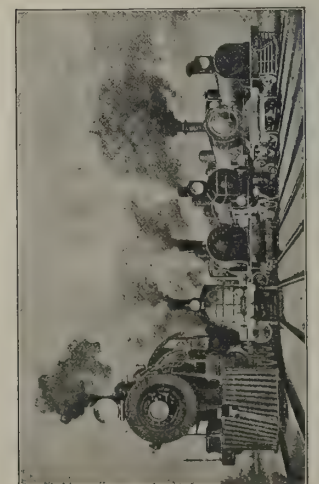
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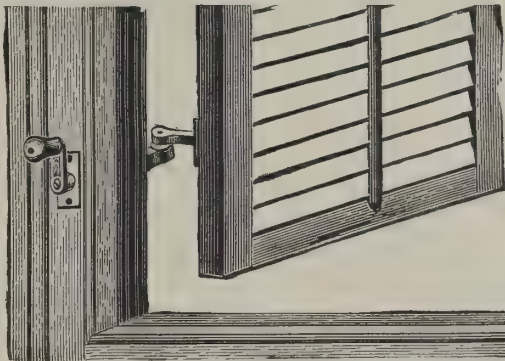
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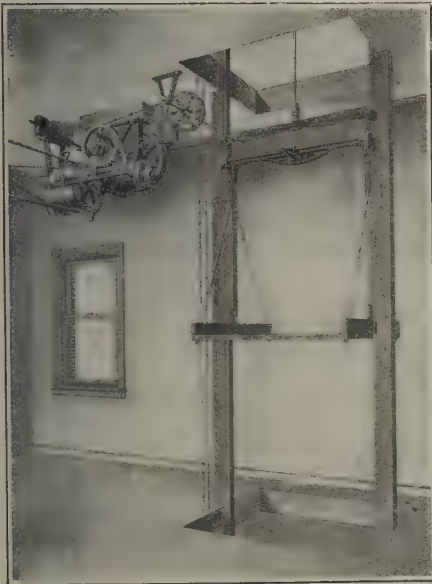
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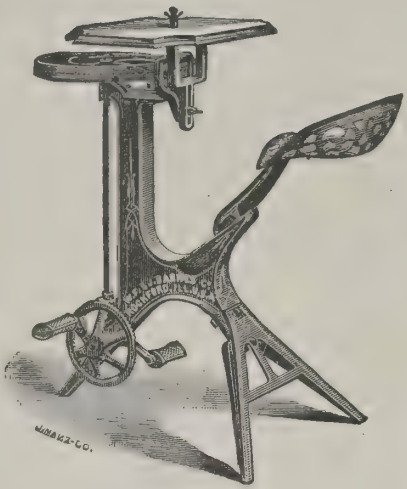
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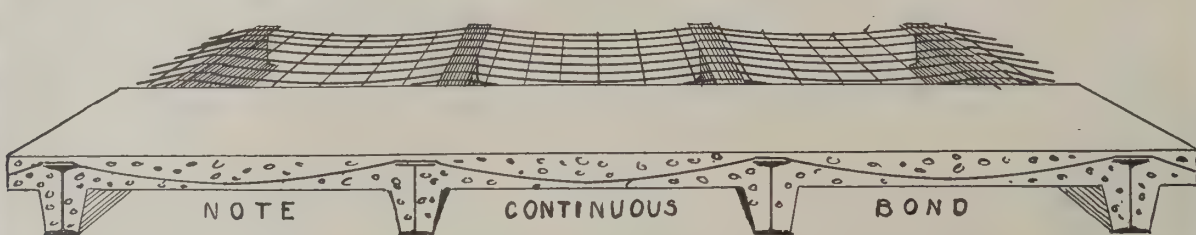


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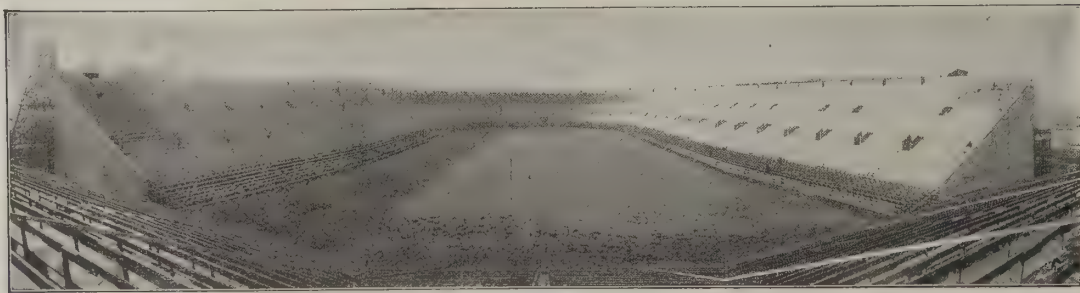
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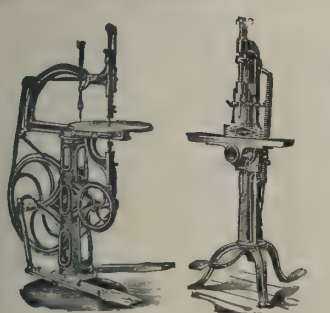
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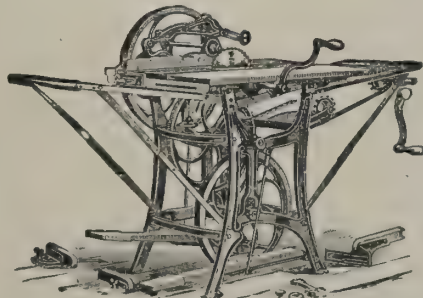
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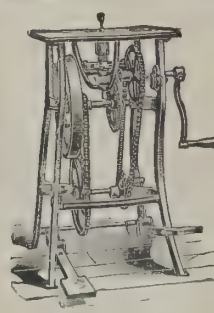
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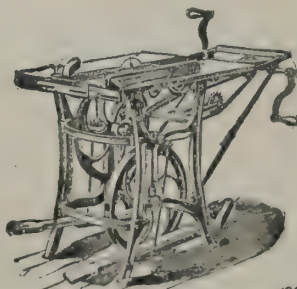
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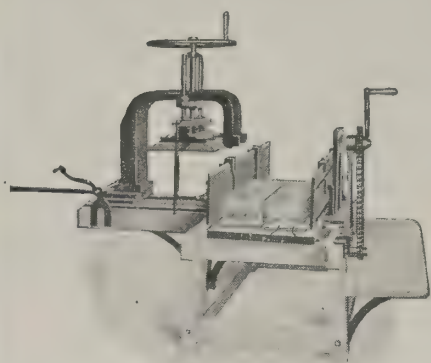
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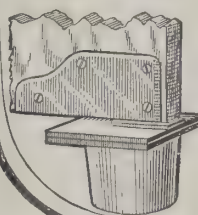
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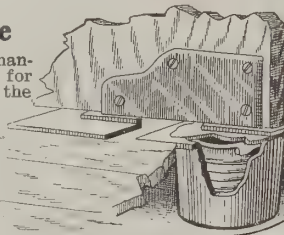


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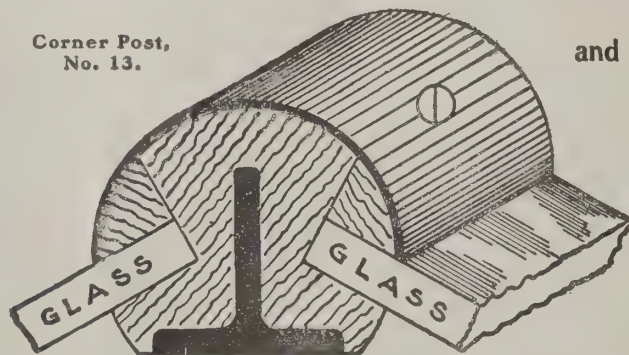
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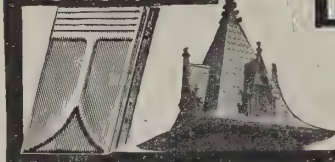
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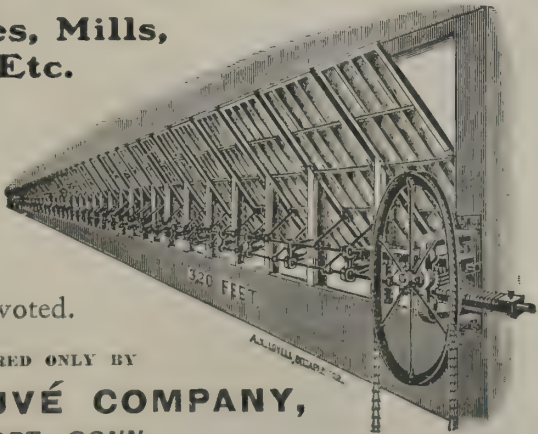
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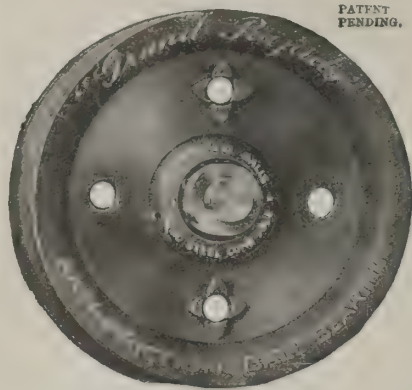


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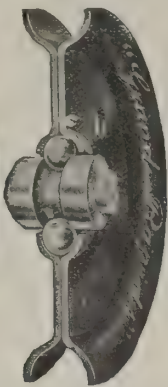
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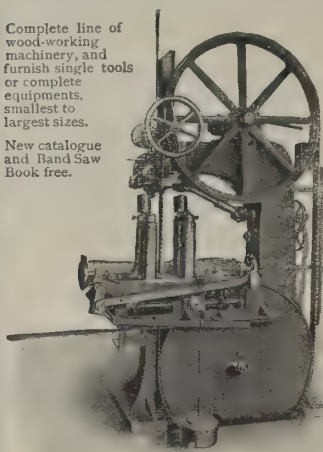
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3. Has all the features that make the single tools so successful.

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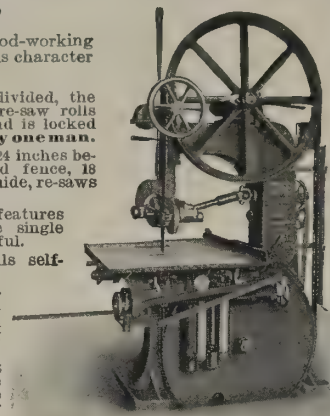
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7. Table tilts 15 degrees for angle sawing.

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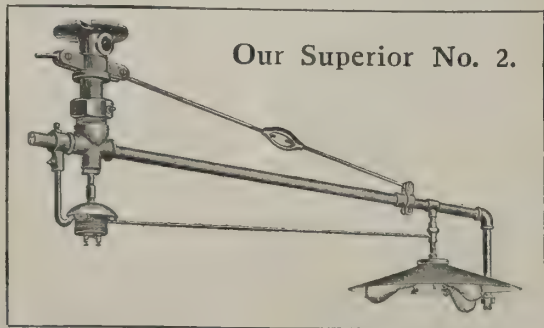
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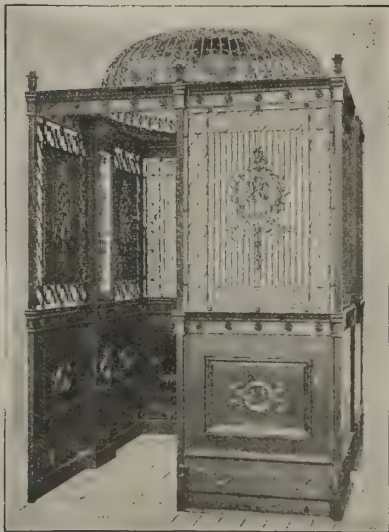
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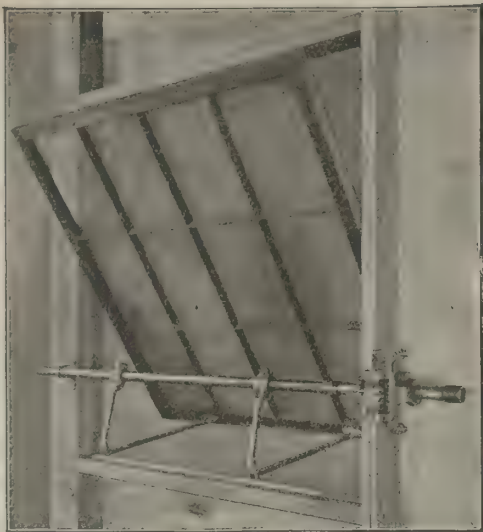
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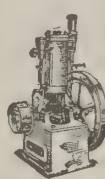
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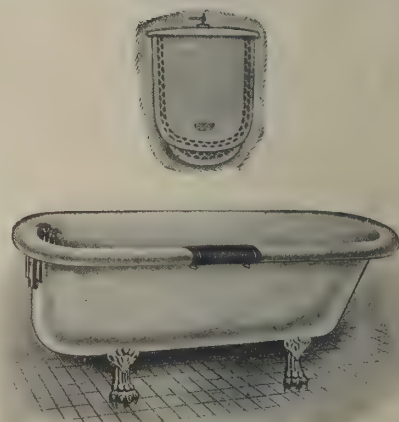
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THE NORTH COURT.

"BELLEFONTAINE," ESTATE OF GIRAUD FOSTER, ESQ., LENOX, MASS.—See page 47.

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MONTHLY COMMENT.

THE relations which necessarily exist between the architect and the physician have more than once been adverted to by the BUILDING MONTHLY. Specialization is at once an advantage and a hindrance. The danger of specialization is overspecialization, in which the specialist is so absorbed in his own specialty that he is not fully alive to the points at which it comes in contact with other specialties. That this is a very grave matter is already apparent from the fact that many specialistic physicians are not fully aware of the progress made by other physicians in other specialties, nor of the actual mutual relationship of their individual studies. The architect and the physician represent professions that, in many cases, are quite far apart; and yet the environment of humanity plays so important a part in human ills, the mind and body are so easily influenced by the habitat, that the real relationship of these professions is very close and intimate. And they must continue to draw closer as science advances and the influence of the home as a disease producer and a disease curer becomes more manifest. The architect must, in fact, be so well up in sanitary science that he needs more than an elementary knowledge of preventive medicine. The physician, on his part, does not need a course in the art of design, but he would be wonderfully helped by some information concerning the practical constructive details of building. Each of these great professions has something to give the other. It behooves them to get together in a thoroughly amicable way.

THERE is no more important work in architecture than the interesting of the laymen in the art. This interest is difficult to obtain, and difficult to hold, but the utmost effort should be made at all times. Many persons are quite unconsciously interested in architecture. There are few who are not impressed by the aspect of a building, by the shape, size, furnishing of a room; even a wall painting will excite some interest by reason

of its novelty; and a statue in a public place—or in a private hall—will invariably attract more than a glance. All this is so much to the good, and is actually a foundation for further effect. Yet, as a matter of fact, this interest is so relatively slight and indifferent as to hardly be real. It is not the good things that impress the uninstructed, but the showy.

AND how is it to be accomplished? There is but one way, and that is to keep everlastingly at it. There is no central single root that, once corrected, will work an immediate cure in every direction. Let it be assumed that our architects need better and broader instruction; the system of the schools, the influence of the teacher, the mode of the teaching will not produce effective reformation. It will help, of course, but not much more definitely than a great river emptying its waters into the sea helps in the prodigious total. For the teacher will immediately exclaim that he does the best he can, and that with such material as is given him—his students, to wit—he can do no more. The architect established in practice will calmly remark that he does the best that can be done for the money and that his client will simply not take anything better. All of which is often true enough. The client, on his part, will tell you he has tried various architects and been almost ruined by each; which reduces the problem to a state of woe, and there it may be left. As a matter of course the betterment of architecture must positively result from a broadening of interest in the subject in every class of the community. But concerted effort is needed, and wise and patient counsels. This country has seen, in the past twenty-five years, a most abounding interest excited in the rough and dangerous game of football. And surely football is a most unnecessary pastime. It neither saves life nor creates wealth, although it brings large sums of money to its promoters. But the simple fact is it is unnecessary. Now, architecture, in one form or another, is absolutely essential to the progress of civilization and to the simplest existence. Should it not be possible to rouse public interest in such a subject, which touches every human being in the civilized world? The football promoters have gone about their business systematically and with definite ends in view. They realized that public interest was essential to success in their game, and they won that interest and have greatly increased it. Their operations may have a lesson for the friends of architecture.

HELPS TO HOME BUILDING.

THE THIRD OF A SERIES OF TWELVE PAPERS.

THE PLAN.

THE true measure of the success of a house is the success of its plan. No house can, by any possibility, be good, if it have a bad plan. Good planning is a difficult art, calling for the exercise of the best qualities of the architect. The client may have quite definite ideas as to the general disposition of his rooms, but the trained and experienced architect is alone capable of giving these ideas concrete expression in the plan.

A plan, to be good, must be economical of space; in other words, the utmost internal area must be obtained within the bounding walls. The latter, in their turn, must be so restricted as to enclose the greatest amount of internal space within the cost set aside for this portion of the work. It is quite as necessary to exercise economy of space in designing a suburban or country house as in designing a city house. In the latter the area is of course very restricted, and the planning of such houses calls for a very high degree of skill. The planner of the suburban and country houses has more land at his disposal, and has a very much more marked degree of freedom; but even he is kept within bounds by the impossibility of permitting his house to sprawl over an indefinite area, and by the question of total cost, which even in quite expensive houses, is a determining and final question.

Economy of space has no relationship with smallness of area. An economical plan is not a small plan, nor is a small house one planned economically because of its size. Economy in planning means the best utilization of the interior area; thus a very large house may be planned in a thoroughly economical manner, if wisely and judiciously planned; and a small house may be extremely wasteful if these common sense restrictions are avoided.

Another elementary requirement of good planning is convenience and directness of communication. The modern French school of architects lead in this matter, and, indeed, the great strength and hold of the contemporary French school lies in its insistence on the value of the plan, and of the surpassing merit of the plan as a determinative element in the production of good architecture. The chief device, the most conspicuous aid to good results, insisted on by the French is that of axial planning. The meaning of the phrase is quite apparent, namely, that rooms are arranged on an axis, which, in its turn, serves as a means of communication through the whole building.

AXIAL planning is best illustrated, in domestic work, in large houses, where the main room opens from a central hall, which may be a corridor or, if the house be very large, a central apartment which may be at once the geographical center of the house and the center of its social life. A good example of this sort of planning on a large scale is supplied by the great house of Mr. Clarence H. Mackay, at Roslyn, N. Y., illustrated in the BUILDING MONTHLY for September, 1903, the center of which is occupied by a hall of vast proportions. On one side are the drawing-room and library; on the other, the billiard-room and dining-room. This arrangement is so simple and direct as to be almost commonplace in a bare description. But it is in the treatment of this very commonplace plan that the Mackay house has distinction and artistic merit.

A wholly different type of plan, and also in a sumptuously built house, is supplied by the interesting dwelling of Mr. H. W. Poor, at Tuxedo, illustrated in the BUILDING MONTHLY for July, 1904. Here the hall, instead of being a central feature, is carried straight across the entrance front of the house, forming a true corridor. The drawing-room and dining-room open directly from it; adjoining the latter, at one end, is the service department; at the other, the library. It is an axial plan, with direct and immediate communication with the principal rooms; but it illustrates a type wholly different from that followed in the Mackay house.

The value of the axial principle is now so generally recognized that the first thing an architect looks at when examining a plan is the directness of the communication. One must get about a house as well as stay within it; and the plan that affords the easiest way of doing this, which brings all the rooms into easy communication with each other, which differentiates the various parts of the house, provides a place for each portion, and puts that portion into the best relationship to the other parts, makes the nearest approach to excellence which may be termed ideal.

And the principles which obtain in the planning of large houses are quite as applicable and quite as important in the smaller house. No house is ever too small or too unimportant to be badly planned; for the plan is at once the foundation and the essence of good house building.

A distinguishing feature of the modern house is the importance of the hall. Only a short time since the hall was a mere passage, dark and dull, containing the stairs by which the upper floors were reached. The modern hall is a brilliant and sunny apartment, amply lighted, abundantly furnished, and treated and used as a living-room. It still contains the stairs, but these are no longer constructive only, but are treated as a valuable feature in the decoration scheme. At all events, we have thoroughly awakened to the fact that the stairs, being an essential part of the house plan, need not be hid, but can be placed where they will be most accessible and treated accordingly. The modern hall is an interesting illustration of the importance of the plan in the making of the house; for it shows how rational treatment has converted a despised member into the most prized apartment of the whole dwelling.

The problem of house planning involves so many questions that a general discussion of the subject must, perforce, be very general. It is important to note, in this connection, that the individual plan has obvious advantages over the type plan. The type plan, if of a good type, is not without value; but the special house, built for a special use, calls for individual treatment in the planning, exactly as it calls for individual treatment in the exterior.

Good planning requires very careful study and a wide familiarity with the subject. The special wants and needs of the inmates must be understood and expressed in the plan. If much entertaining is done, the plan must meet the requirements of an active, social life. If it is the home of a student, his special tastes and wants must be satisfied. If the house be the home of people of average interests—which too often means people without real interest in anything—it must approach general conditions, and have a certain flexibility capable of being applied to various purposes.

The location and size of the rooms must, of course, depend on the uses to which the house will be put and the characteristics of the people living in it. These are quite minor matters, compared with the more pressing merits of the axis. It should be noted, however, that the plan that is adapted to one family may be quite unsuited to another. A wide-open plan, with broad connecting doorways between the rooms, may be just the thing for one set of persons; while a quite marked privacy may be demanded by another. A single general rule, applicable for all houses and for all conditions, is that the rooms open on to a corridor or line of communication. Whether bedrooms, for example, should be communicating or not is largely a matter of personal inclination; but no room, unless it be a part of a suite, should be so placed that it can only be entered through another room. The doorway and the axis are most helpful agencies in determining a good plan.

NOTABLE AMERICAN HOUSES*

BY BARR FERREE.

"BELLEFONTAINE," ESTATE OF GIRAUD FOSTER, ESQ., LENOX, MASS.

MR. GIRAUD FOSTER'S house at Lenox, Mass., is a wonderful house in a wonderful place. The landscape of the Berkshire Hills is so very lovely that the art of man is hardly needed to add to its beauty; but Mr. Foster has, in his splendid house and beautiful gardens, added a new note of loveliness to Lenox, and created a fresh spot of interest that is almost without parallel in the extraordinary care and exquisite art that has been lavished upon it.

The house and grounds constitute the component parts of a single creation in which each bears a definite relationship to the other. The house is so large and so sumptuous in its materials and its design as to be rightly described as palatial. It consists of a vast central building with two wings that form an open court on one side. The south front has for its chief motif a great portico, supported by Corinthian columns rising to the full height of two stories and embracing the three central windows. The adjoining walls contain each two windows, separated by so wide a space that room is found for an ornamental slab between those of the upper story. The house is built of brick and

the ends of the wings; on the two exposed faces of the towers and the three arches of the center. With the exception of the side walls of the wings, all of the first story is of marble; the upper walls are of brick, with marble trimmings; and the third story of the towers is again of marble.

Obviously the south front is the front of state and of honor, and the north front is the home front; yet neither contains an entrance doorway. The chief entrance is through the palm room, and is indicated by a marquise of wrought iron, very original and striking in design, which is placed before a round arched opening which, otherwise, gives no indication of its importance. The palm room is lined with brick and has an open beamed roof of wood. It is lighted with great round arched windows, in the spandrels of which are superbly mounted heads of wild animals. It contains some grand ferns and other decorative plants. A flat arched door, closed with magnificent gates of wrought iron, and on either side of which stands a column of rare marble supporting an antique statue, connects it with the rotunda, through which the hall is entered and the main part of the house is reached. This rotunda is a circular room, beautifully paneled and vaulted, and lined throughout with stone. Cushioned seats are built in below the panels, and a Roman table stands in the center.

in the ceiling. Paintings are let into the walls above the doorways, and over the built-in mirrors. The fireplace, of marble, is exquisitely enriched with gilt bronze. The windows are draped with rich curtains, and the costly furniture is in keeping with the architectural accessories. A crystal chandelier hangs from the center of the ceiling, and beautiful gilt girandoles are applied to the panels of the wall.

The living-room adjoins the salon and occupies the center of the south front, its windows opening out on to the monumental portico. It is in the Louis XIII. style. Not less elegant in its furnishings than the salon, it only differs from it in style and in being, as its name signifies, the living-room of the family. Its walls are paneled to the ceiling, partly in wood and partly with superb pieces of damask silk. At either end is a fireplace, rich pieces of mottled marble, the overmantel enclosing a full length portrait of Spanish royalties in a frame of the same material, beautifully enriched with gilded bronze. Over the doors and the large panels adjoining the fireplaces are exquisite paintings of heads with seated putti. The furniture includes some notable tables and cabinets, and the lights are girandoles and great vases standing in the corners, transformed into candelabra.

The dining-room, in the Louis XV. style, is the last on the south front and completes the series of "state"



THE FOUNTAIN IN THE COURT—"BELLEFONTAINE," ESTATE OF GIRAUD FOSTER, ESQ., LENOX, MASS.

marble, but the brick is quite subordinated, the whole of the central part of the south front being marble. A high balustrade is carried around the top of the building, partly concealing the attic, which forms the third story of the center. The building is finished with a loggia at each end.

The north front is less grandiose in design, but very full of interest. Two low wings project from the main structure, that on the east being a palm room and entrance; that on the west the kitchen and servants' quarters. In their inner corners are square towers, integral parts of the house, which is here three stories in height. The leading motif is the round arch, which appears in every part; in the loggias on the ends; in

The main hall is on the north front of the house, having three large round arched windows opening on to the court. The ceiling is flat, with a segmental arch at either end, one over the beginning of the stairs, the other before the enclosure at the far end, and in which stands the fireplace. It is brilliantly lighted by the great windows, which are hung with silk curtains, and is walled and floored with marble. A deep frieze is carried around the upper walls, painted in subdued tones, and representing hunting scenes and foliage in the rectangular panels, and birds and plants in the spandrels between the arches, which, in their turn, have a broad border of painted ornament, this happy mural decoration thus relieving the coldness of the marble. The chimneypiece at the further end fills almost the entire wall, and rises to the ceiling. Delicately carved Doric columns support an entablature beneath which is the fireplace. The upper part contains a large mosaic within an enriched frame, and the detail of the side is delicately cut and colored. The fire dogs are marble lions, carrying heraldic devices, standing on high bases. The doors opening into the hall have painted borders over the openings, and on each side stand marble columns supporting sculptured animals or other figures. Busts are placed on brackets between the windows. On the platform at the head of the stairs is an open arch overlooking the rotunda.

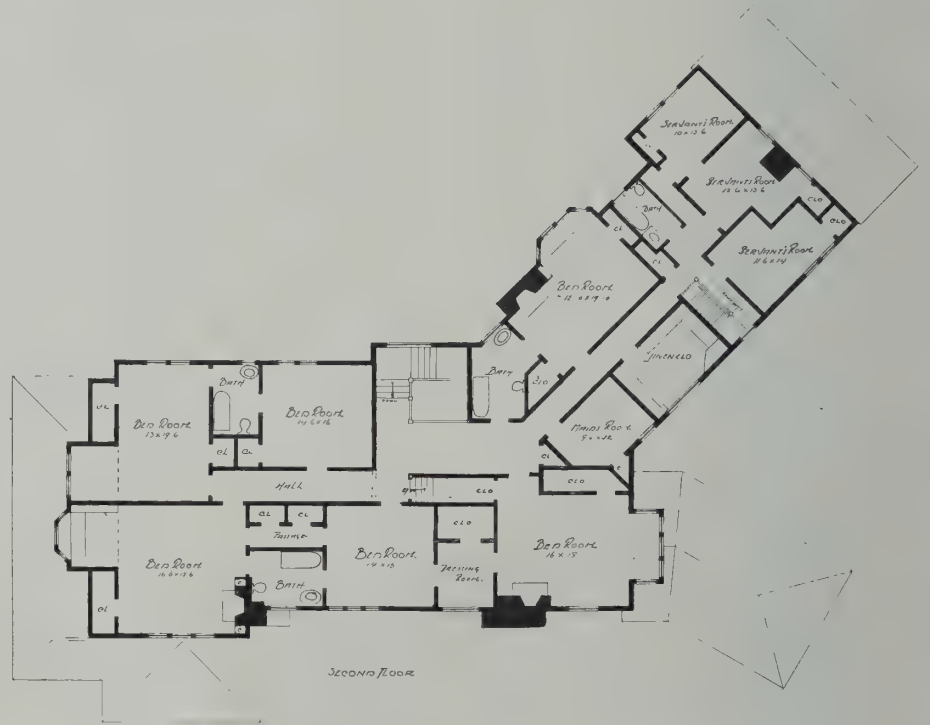
The salon is the first room on the south front. It is a magnificent apartment, designed in the style of Louis XV., and is paneled throughout with wood with a delicately ornamented cornice and decorated corners

apartments. It is entered both from the hall and the living room. Its walls are paneled in wood enclosing large paintings of rural life, the cornice being supported by pilasters with gilded capitals. The fireplace is beautifully detailed and has a built-in mirror above it with festooned frame. Over the doors are arched panels with carved decoration of foliage. The floor, as in the other two great rooms, is almost completely covered with a magnificent rug.

Of the other rooms of the house it is only necessary to refer to Mr. Foster's own room, which opens immediately from the rotunda, the doorway to which is enclosed within a superb old Italian door-frame of carved wood. It is a beautiful square apartment, richly furnished, and with an old Italian mantel, above which is an old Italian mirror in a splendid frame, gilded and carved, and surrounded with paintings in medallions.

The superb situation of the house is almost without parallel. A long winding drive through the forest brings one to a turn, below which is the magnificent fountain, to which the place owes its name. The contrast between the thick woods and the open house-space is quite startling, and the effect is heightened by the lavish enrichment of the grounds and the costly works of art that are used in their decoration. The drive divides in two above the head of the fountain, and is continued down on either side to a drive across the north front of the house, by which the stables and a gate lodge are reached to the west, and other parts of the

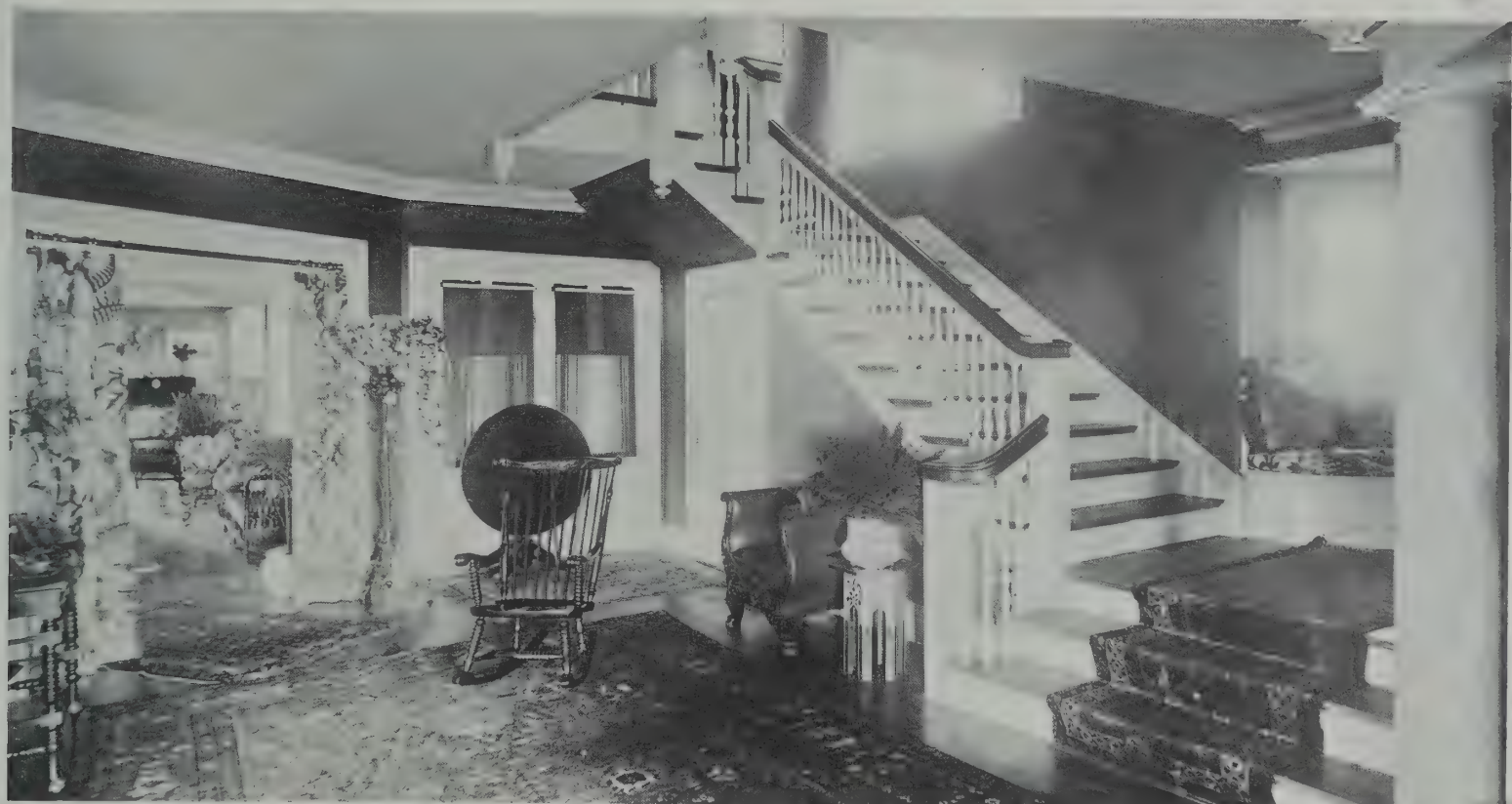
* Previous articles in this series: "BILTMORE," THE ESTATE OF GEORGE W. VANDERBILT, ESQ., Biltmore, N. C., February, 1903. THE GARDEN AT "GEORGIAN COURT," THE HOUSE OF GEORGE J. GOULD, ESQ., Lakewood, N. J., August, 1903. "HARBOR HILL," THE ESTATE OF CLARENCE H. MACKAY, ESQ., Roslyn, N. Y., September, 1903. "THE ORCHARD," THE COUNTRY SEAT OF JAMES LAWRENCE BREESE, ESQ., Southampton, N. Y., November, 1903. THE RESIDENCE OF W. L. STOW, ESQ., Roslyn, N. Y., December, 1904. "WHITE HALL," THE HOUSE OF HENRY M. FLAGLER, ESQ., Palm Beach, Fla., January, 1904. "FAULKNER FARMS," THE ESTATE OF MRS. CHARLES F. SPRAGUE, Brookline, Mass., March, 1904. "THE HOUSE OF E. J. BERVIND, ESQ., Newport, R. I., April, 1904. "GREY CRAIG," THE ESTATE OF J. MITCHELL CLARK, ESQ., Newport, R. I., May, 1904. "BLAIRSDEN," THE ESTATE OF C. LEDYARD BLAIR, ESQ., Berdardsville, N. J., June, 1904. "KILDYSART," THE COUNTRY SEAT OF DANIEL O'DAY, ESQ., Deal Beach, N. J., July, 1904. THE ESTATE OF HENRY W. POOR, ESQ., Tuxedo, N. Y., August, 1904. THE COUNTRY SEAT OF STANFORD WHITE, ESQ., St. James, L. I., N. Y., September, 1904. "DREAMWOLD," THE ESTATE OF THOMAS W. LAWSON, ESQ., Egypt, Mass., October, 1904. THE HOUSE OF HERMAN B. DURYEA, ESQ., Old Westbury, N. Y., November, 1904. THE HOUSE OF MRS. RICHARD GAMBRILL, Newport, R. I., December, 1904. MRS. A. CASS CANFIELD'S HOUSE, Roslyn, N. Y., January, 1905. THE HOUSE OF OGDEN MILLS, ESQ., Staatsburg, N. Y., February, 1905.



THE SUMMER HOME OF D. D. WALKER, ESQ., KENNEBUNKPORT, MAINE.—See page 60.
MESSRS. CHAPMAN AND FRAZER, ARCHITECTS.



THE DINING-ROOM.

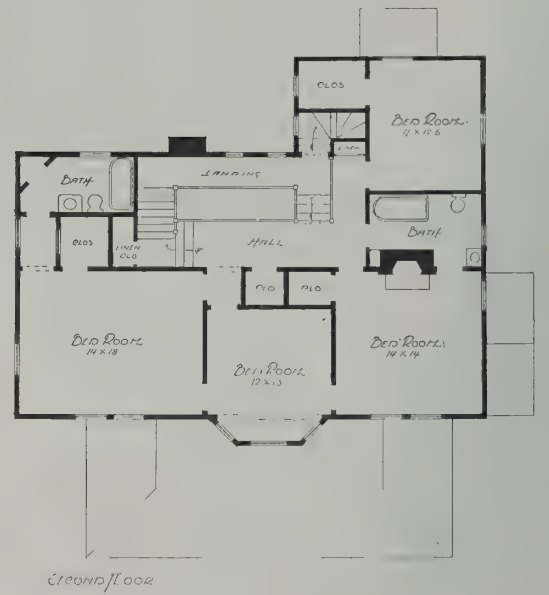


THE HALL.

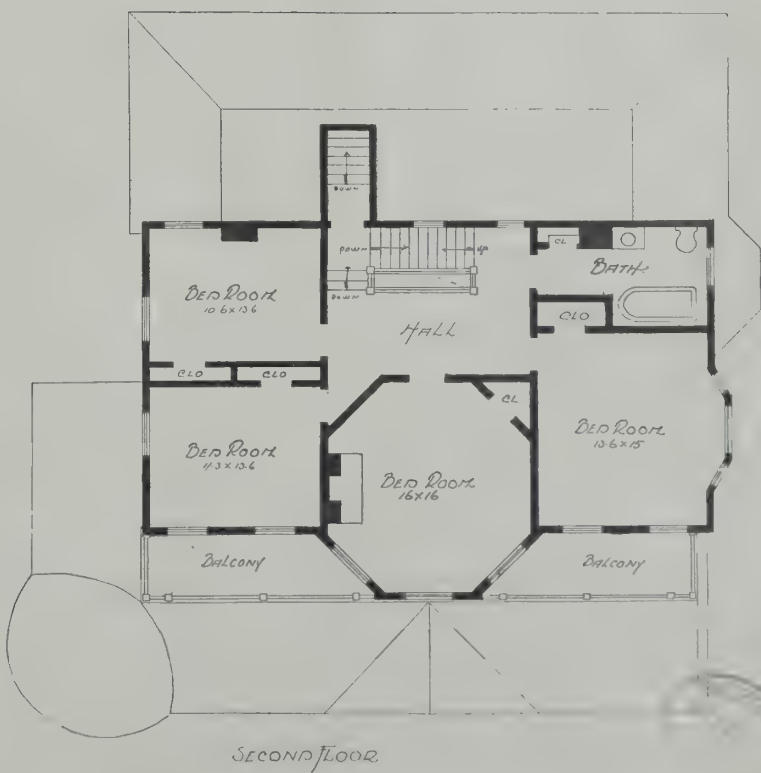
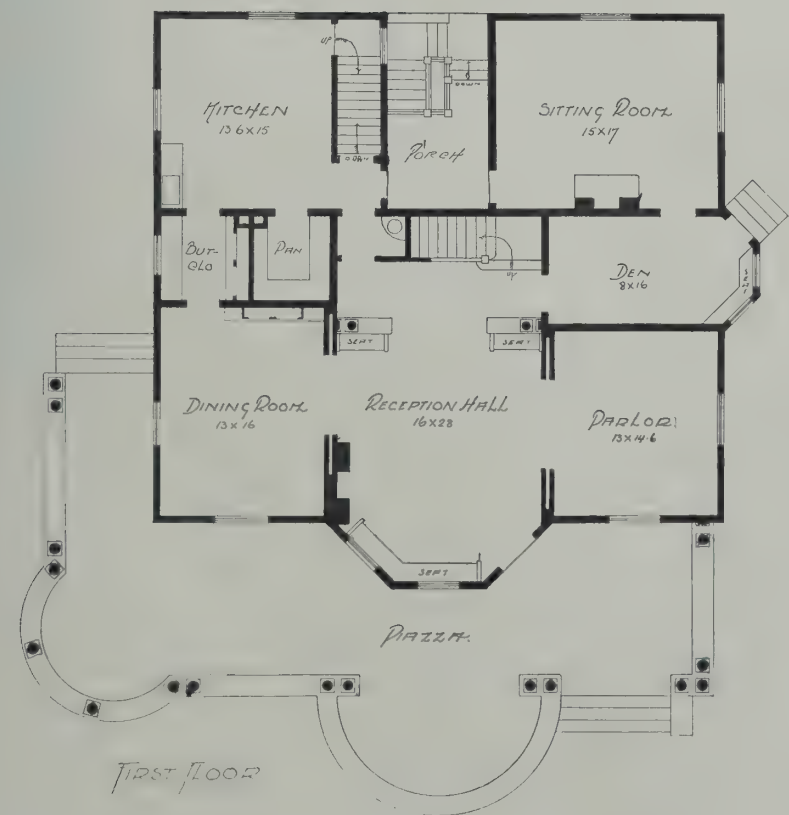


THE LIVING-ROOM.

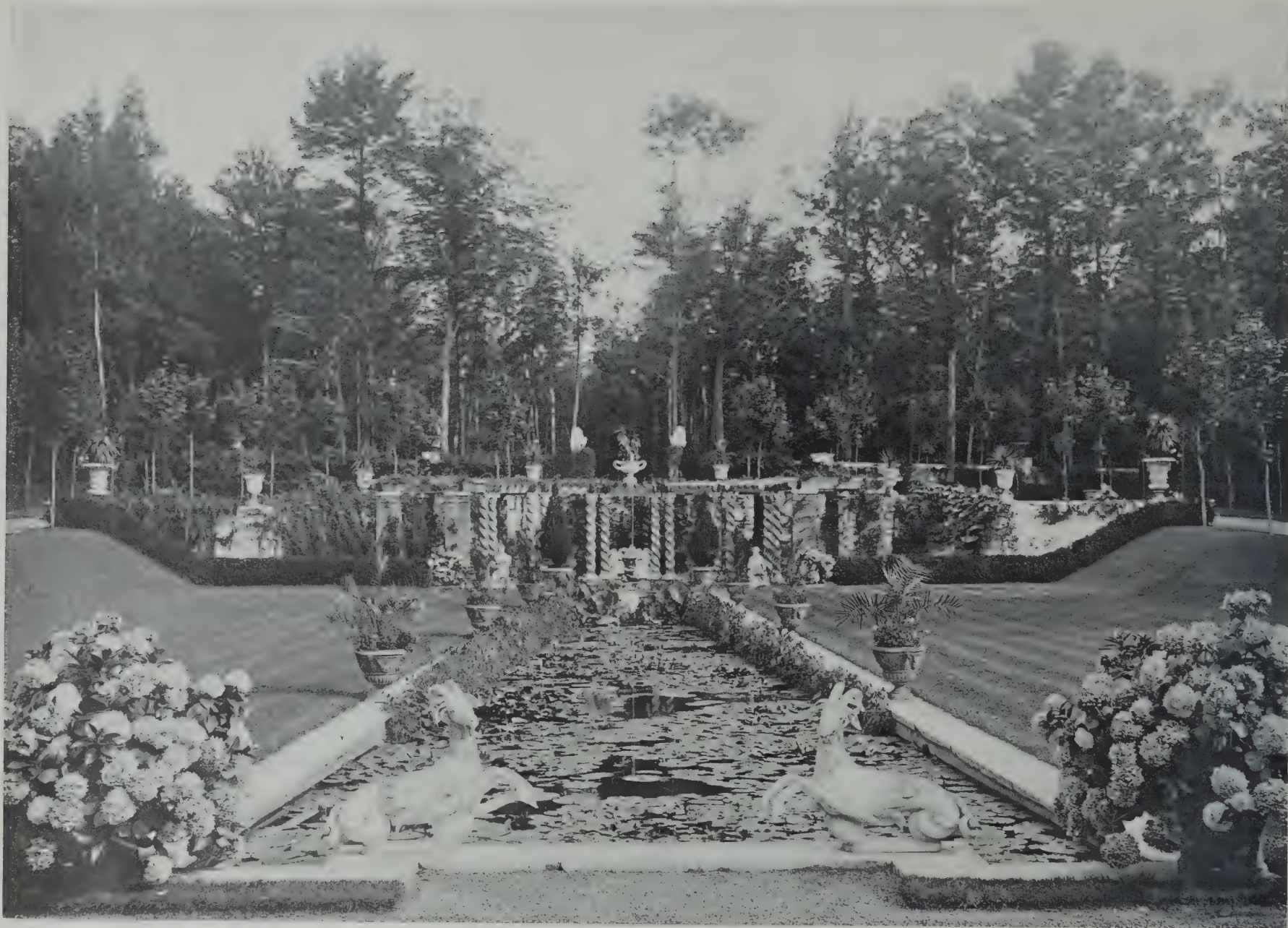
THE SUMMER HOME OF D. D. WALKER, ESQ., KENNEBUNKPORT, MAINE.—See page 60.
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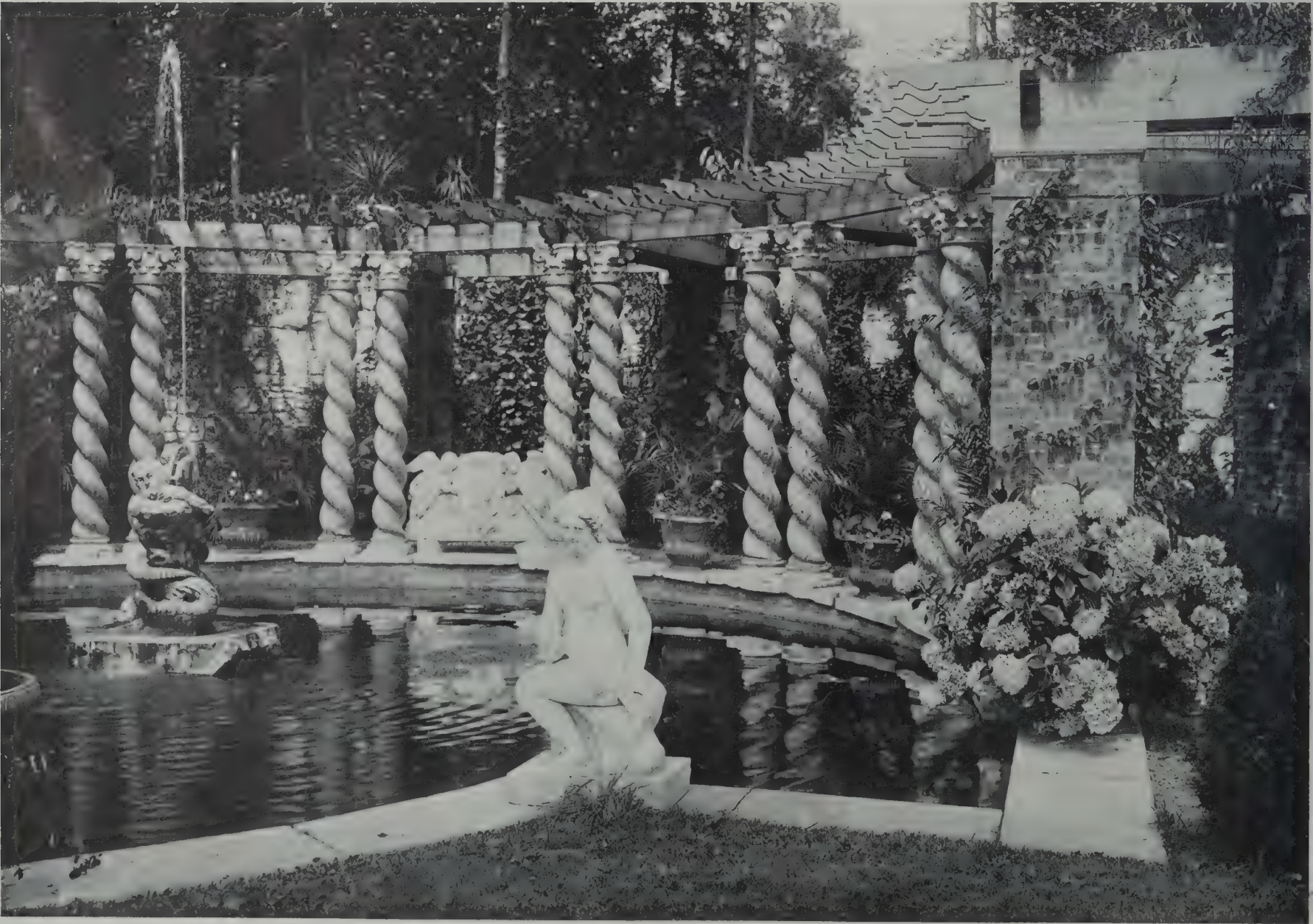
A TWIN GABLE HOUSE AT WINCHESTER, MASS.—See page 61.
MR. THOMAS W. JAMES, ARCHITECT.



A HOUSE AT IPSWICH, MASS.—See page 64.
MR. HERBERT C. CHIVERS, ARCHITECT.



THE POOL FROM THE COURT.



THE PERGOLA FROM THE FOUNTAIN.

"BELLEFONTAINE," ESTATE OF GIRAUD FOSTER, ESQ., LENOX, MASS.—See page 47.

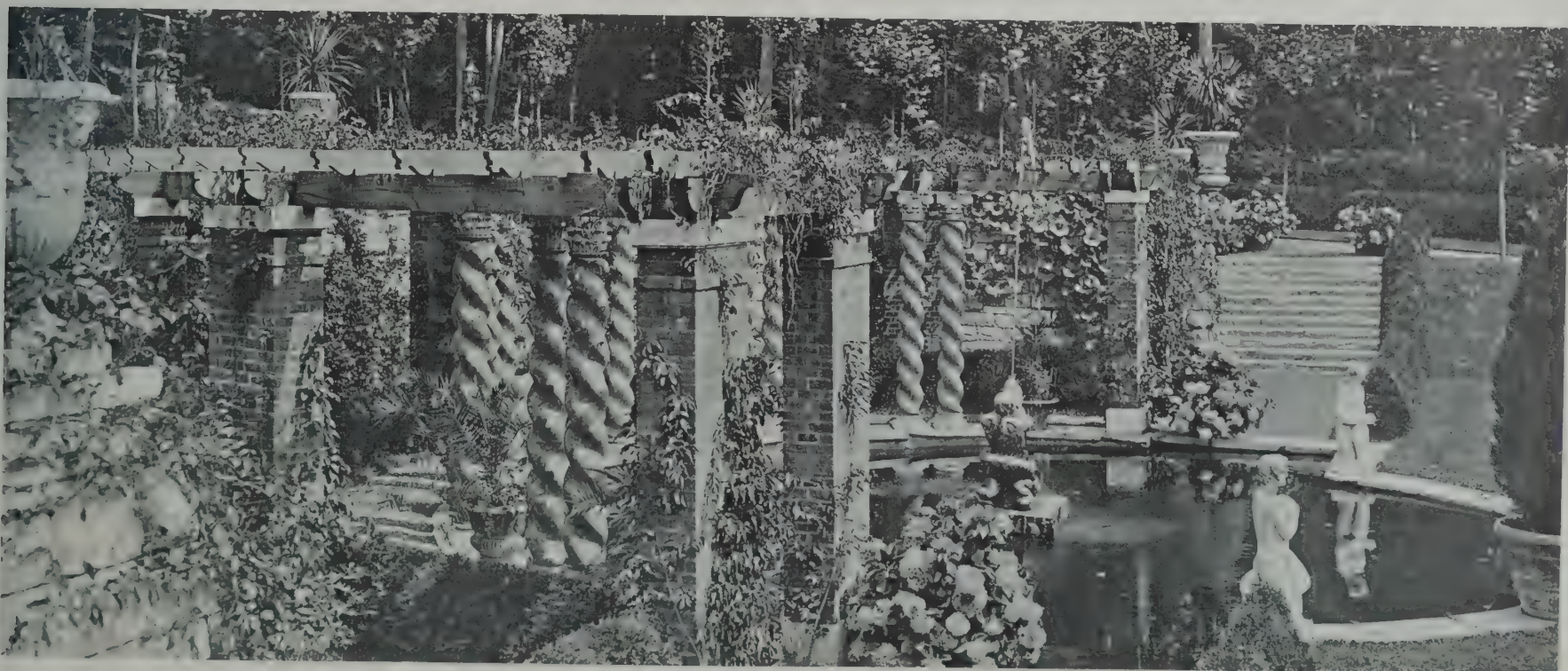
MESSRS. CARRÈRE AND HASTINGS, ARCHITECTS.



THE GARDEN FROM THE EAST LOGGIA.



THE NORTH FRONT.



THE PERGOLA FROM THE DRIVEWAY.

"BELLEFONTAINE," ESTATE OF GIRAUD FOSTER, ESQ., LENOX, MASS.—See page 47.

MESSRS. CARRÈRE AND HASTINGS, ARCHITECTS.

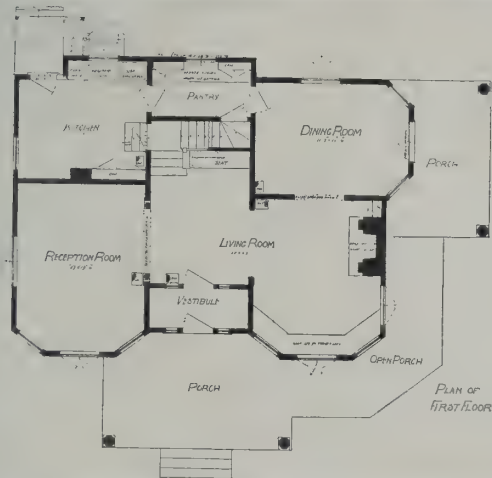


GROUND FLOOR PLAN



FIRST FLOOR PLAN

RESIDENCE OF F. W. BAILLIE, ESQ., TORONTO, CANADA.—See page 61.
MESSRS SPROAT AND ROLPH, ARCHITECTS.



HOUSE AT ELDORA, IOWA.—See page 64.
MR. A. M. WORTHINGTON, ARCHITECT.



THE HALL.

AN ELIZABETHAN HOUSE AT PLAINFIELD, N. J.—See page 65.
MR. A. L. C. MARSH, ARCHITECT.



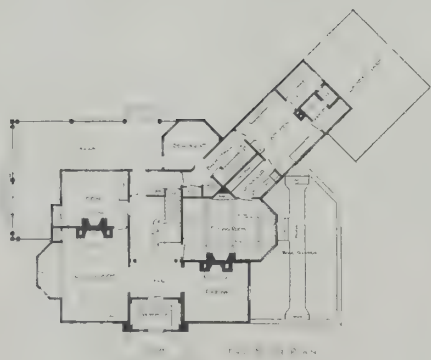
THE LIVING-ROOM.



THE DINING-ROOM.

AN ELIZABETHAN HOUSE AT PLAINFIELD, N. J.—See page 65.

MR. A. L. C. MARSH, ARCHITECT.



RESIDENCE OF WILLIAM E. WOOD, ESQ., ARLINGTON, MASS.—See page 62.

MESSRS. GAY AND PROCTOR, ARCHITECTS.



THE HALL AND STAIRCASE.



THE DINING-ROOM.

RESIDENCE OF WILLIAM E. WOOD, ESQ., ARLINGTON, MASS.—See page 62.

MESSRS. GAY AND PROCTOR, ARCHITECTS.

**"BELLEFONTAINE," ESTATE OF GIRAUD (FOSTER, ESQ.,
LENOX, MASS.**

(Concluded from page 47.)

estate are approached toward the east. Behind the fountain the drive is upheld by a marble wall, with a retaining wall on the further side, beyond which is the thick growth of forest trees.

The great fountain is placed at the end of a long pool, and is surrounded with a pergola of twisted marble columns, imported, like most of the marble work, from Italy. It forms a magnificent climax to the house grounds, and is a structure of unusual beauty. Beyond the drive is the court enclosed on three sides by the house. It has an outer balustrade whose piers support vases and statues and contains many fine bay trees of great size and age.

In few places in America will be found such a superb combination of natural American scenery and primeval woodland with the most formal treatment of landscape effects imported from France. As the visitor approaches the house from the north through the wind-

Athenian Acropolis. There were only two places in the world, Professor Gardner said, where the study of this famous hill city could be carried on. One, of course, was the Acropolis itself; the other was the Elgin Room of the British Museum. He proposed to trace the various stages in its development, from the bare rock to the marvelous harmony of buildings that had made it the wonder of the world. The hill must always have been conspicuous in the Athenian landscape, and was well adapted for defense against pirates from the sea or invaders from the landward side. On a large scale plan, Professor Gardner then went over the line of the early walls of the Pelasgian masonry, pointing out the rock-staircase similar to those at Mycenæ and Tiryns, the tunnel entrance on the north, and the west gates with a flanking tower. The early house of Erechtheus was described as the palace of the early kings, the center of the worship of Stato, and the favorite home of Athene. From this point, Professor Gardner built up the later Acropolis by card diagrams superposed on the original plan, showing in succession the new

faceted stone laid up at random. The remainder of the house is covered with cement stucco, left in its natural soft gray color. The trimmings are stained a soft brown color. The two chimneys are architectural features in themselves, and the twin gable between the same in the roof is also a good feature. The roof is stained a deep red color.

The entrance hall, which is placed in the angle formed by the intersection of the two wings of the house, has a white painted trim, crimson walls, wood cornice, and an ornamental staircase with painted balusters and posts, and a mahogany rail. A lavatory is conveniently placed under the stairway.

The living-room, of unusually large dimensions, is also furnished with a white painted trim. It has a low paneled wainscoting of the Colonial type, and a massive beamed and ribbed ceiling. The alcove nook is separated by an archway, and is furnished with paneled seats, and a flower shelf in the front of the windows. The fireplace has a brick hearth and facings, and a mantel. The walls are treated in a soft green color,



THE DEN—THE SUMMER HOME OF D. D. WALKER, ESQ., KENNEBUNKPORT, MAINE.

ing forest drive, he is not prepared for the sudden transformation which meets his eye when he emerges from the woods onto the terrace overlooking the long basin and the north front of the house. Here everything is laid out with a geometrical nicety and upon the most formal lines. The avenues of poplars lining the straight avenues which approach the house from the east and west and the little formal gardens bordering the loggias at both ends of the house are French in spirit and in perfect harmony with the architecture of the mansion. In front of the house is a beautifully graded sweep of lawn, and the view of the distant hills is not broken by the presence of a single tree, while the natural forest at the north side of the house affords a splendid background of green which sets out the white walls of the house to the best advantage.

THE ACROPOLIS AT ATHENS.

From the British Architect we learn that Professor Ernest A. Gardner, of University College, recently delivered a lecture at the British Museum to the members of the University Extension Guild, on the

Erechtheum, the peristyle added by Pisistratus, the original Parthenon, which was later than, and possibly the result of the battle of Marathon, and the massive platform of masonry. Next came its capture by the Persians, and, when the Athenians regained possession, the north wall was rebuilt by Themistocles and the south wall later by Cimon. Then followed in order the later Parthenon of Pentelic marble, the colossal statue of Athene Promachos, the first object on the Acropolis visible from the sea, and the entrance gates, the magnificent plan for which was not carried out in its entirety. Professor Gardner then invited his audience to visit the Elgin Room, where the most important sculptures from the Acropolis were pointed out.

**THE SUMMER HOME OF D. D. WALKER, ESQ.,
KENNEBUNKPORT, MAINE.**

The summer home of D. D. Walker, Esq., at Kennebunkport, Maine, which is illustrated on pages 48, 49 and above, is planned in the rambling manner. The terrace wall and chimneys, underpinning and the columns supporting the porte-cochère are built of rock-

in harmony with the white trim, and very appropriate for a summer house. The draperies are in tones of green, white and red. The den is treated in red and white, and has a fireplace, paneled seat, and a bookcase.

The dining-room is separated from the hall by an attractive archway, with columns at either side of the entrance, and the whole forming a lobby effect. This dining-room is in a combination of green walls and white trim, and has a high paneled wainscoting furnished with a plate-rack, and a beamed ceiling. There is a china cabinet built in, and furnished with doors glazed in latticed form. One end of the room is taken up with an open fireplace with the facings rising up to the ceiling; on either side of this fireplace there are unique little nooks, fitted with leaded glass windows, in front of which there are paneled seats. At the opposite end of the room there is a bay window with a flower-shelf.

The kitchen and its dependencies are planned with a view of providing all the necessary comforts for the servants, which has now begun to form so important a part in the modern house. The pantries are well

fitted up, and so are the kitchen and the laundry, and the servants' dining hall.

The second story contains six bedrooms, large closets, dressing-room, three bathrooms, nurses' room, besides a large linen room, and the servant quarters, which are isolated from the rest of the house, with a private stairway, and consist of three bedrooms and bath. The bathrooms have porcelain fixtures and exposed nickelplated plumbing. The third floor contains an open attic for storage, trunk-rooms, etc. There is a cemented cellar under the entire house, containing a heating apparatus, fuel rooms, etc.

Messrs. Chapman and Frazer, architects, 8 Exchange Place, Boston, Mass.

A TWIN GABLE HOUSE AT WINCHESTER, MASS.

ON page 50 will be found an illustration of a house, recently completed for Capt. P. A. Nickerson, at Winchester, Mass. The house is a happy combination of stone, shingle and half-timber work. The underpinning

The reception-room is trimmed with pine, and is painted with white enamel paint; it has a floor of quartered oak. The den is trimmed with cypress, and has a wall covered with cypress battens to the height of six feet, and then the whole finished with a picture rack. It has a small open fireplace built of brick, with the facings and hearth of the same. A wooden cornice finishes the treatment of this room. The dining-room is trimmed with cypress, and has a paneled wainscoting, an open fireplace with brick facings and hearth, and mantel. A china closet with leaded glass doors, which is placed at the left of the fireplace, is one of the features of this room. The butler's closet contains a sink, dressers, closets, cupboards, etc.

The kitchen and its dependencies are trimmed with North Carolina pine, and each is fitted with all the best modern conveniences; the former has a range, sink, large store pantry and a lobby large enough to admit icebox.

The second story is trimmed with white pine, painted

The windows showing in the hall have stone mullions. It is trimmed with quartered oak, which is treated with enamel paint. The floor is laid with quartered cut white oak. The staircase, of handsome design, is recessed, and rises from two sweeps, and it has white enameled balusters and risers, oak treads, and a mahogany handrail. It is lighted by skylights glazed with tinted glass.

To the left of the main entrance, the drawing-room has a corner of the two best sides of the house. It is treated in white, with plaster cornice and molded ribs, forming a pattern in the ceiling. The alcove, with bay window, and the open fireplace, built with marble facings, are attractive features.

The billiard and palm room to the right of the entrance is a one-story room with skylights. It is treated in the Italian Renaissance, with groined ceilings, and is trimmed with Circassian walnut. The floor is of quartered cut oak, and is stained. An inglenook in this room is trimmed with oak, and it has



A PLANTED PORCH AND STEPS IN ROCHELLE PARK, NEW ROCHELLE, N. Y.

is built of rock-faced stone laid up at random. The first and second stories are covered with shingles, and the whole is stained a soft brown color, while the trimmings are painted white. The gable-ends are beamed, forming panels which are filled in with stucco, and tinted a cream yellow, while the trimmings are painted white. The roofs are covered with shingles, and are stained a dull green color.

The entrance is into a vestibule, which is octagonal at the front, and to the left of the entrance is a coat closet. Passing through an archway into a small oblong entrance hall, there are archways at either side leading into the reception-room and living-hall respectively; another archway at the front separates the stairway, which is in a rise of ten steps. The living-hall extends the full depth of the house, and is trimmed with cypress, stained and finished in a Flemish brown; it has a high paneled wainscoting and ceiling beams. The staircase, of ornamental character, rises out of this room, at the side of which is a paneled seat. The open fireplace is built of brick, with the facings and a hearth of the same, and a paneled mantel.

ivory white. It contains four bedrooms, large closet, and two bathrooms; the latter are wainscoted and fitted with porcelain fixtures and exposed nickelplated plumbing. The third floor contains three bedrooms and ample storage space. A cemented cellar contains the heating apparatus, laundry, fuel room, cold closet, etc.

Mr. Thomas W. James, architect, 27 School Street, Boston, Mass.

RESIDENCE OF F. W. BAILLIE, ESQ., TORONTO, CANADA.

A HOUSE of the Elizabethan style of architecture is the subject of the illustration presented on page 54. It was built for F. W. Baillie, Esq., at Toronto, Canada. It is constructed of soft colored red brick, with wide gray mortar flush joints. The trimmings are of cut stone. The most striking feature of the exterior is the entrance, which is through a sun court enclosed by a Doric screen, with a fountain in the center and a floor paved with stones.

The hall is in the form of a gallery with groined ceiling, supported at the springings by Doric pilasters.

paneled walls and beamed ceiling, and it also has paneled seats and a fireplace.

The dining-room is trimmed with quartered white oak, stained very dark and waxed, with paneled walls and beamed ceiling. The sewing-room, kitchen and scullery are fitted with all the best modern conveniences. The servants' dining-hall and porch are important features of this part of the house.

The second story is trimmed with white pine, treated with white paint. It contains three bedrooms, nursery, with a children's bedroom adjoining, and a bathroom. One of the rooms has a dressing-room and a private bathroom. The third floor contains the servant quarters and trunk rooms. The cellar contains the laundry, heating apparatus, fuel rooms, cold storage, etc.

Messrs. Sproat and Rolph, architects, Toronto, Canada.

Good work always pays in the end, even if it costs more at the beginning. The cost is never as important as the merit of the article itself.



The Household

THE RIGHTS OF HOUSEHOLDERS.

IN a recent lecture before the Brooklyn Institute, Judge Frederick E. Crane, of the Kings County Court, discussed some of the rights of householders. He cited various cases at law which seemed to indicate that, while "every man's house is his castle," and while citizens are popularly supposed to have a right to use their own property as suits their convenience, still, one's neighbors may have considerable to say about the matter. For instance, a certain well known hotel operated an electric light plant in its cellar, with large dynamos. The occupant of the next house, a private individual, went into court and deposed that the dynamos rendered it impossible to carry on conversation in his parlor; that they prevented sleep at night and had induced nervous troubles and illness in his family. The court held that he had a right to relief, this not being one of the noises incident to city life which all residents of cities must endure, and compelled the hotel to remove its dynamos to a different part of its building.

A man may not carry on a perfectly legal and lawful business on his own property, if by so doing he imposes a nuisance on his neighbor. One Hollister, a dealer in molding sand, kept a large pile of this commodity heaped on his property. Now, when the wind blew in a certain direction, it transferred this sand in large quantities through the windows into the house of an adjoining resident. Said resident, being feminine and energetic, demanded of the court if she had no rights in the matter. The court opined that she had, and ordered the obnoxious sand man to cover up his sand.

Another case in which a woman householder beat a big railroad company was that of a resident on East Forty-sixth Street. The railroad bought adjoining property and erected engine houses and coalbins. Her house was not touched or tangibly injured in the slightest degree, and yet, by reason of the noise and of the soot and coal dust with which it was at all times filled and covered, its value decreased from \$20,000 to \$7,000. The courts held that she had reasonable ground for complaint, and that the company must either remove its business or pay her damages.

Still another independent woman householder brought suit against an electric light plant. In this case she had moved there after the plant was in operation, and she lived 175 feet above it. Yet because of cinders and vibration, disturbing her peace and comfort, the court held that she was entitled to damages.

There are limits, however, to the extent to which neighbors may interfere. In a certain fashionable apartment house in Madison Avenue, New York, there lived some very fastidious people. Right over them lived a family in which, strange to say, there was a baby. This infant, having fixed preferences, declined to quiet down for the night until sleep was induced by rolling him to and fro over the flat in a perambulator. The people underneath protested. The people with the baby humbly replied that they knew it was wrong, but what could they do? They had a five year lease. They couldn't move. If they could move, they didn't know that anybody would take them in with the baby. The little scamp wouldn't go to sleep without the infernal performance every night, and his yelling was worse than the perambulator. The insulted underdwellers went to the court. But the court—the records do not say whether he was married or not—held that rolling a baby carriage over a floor was not an improper use of property and refused to issue an injunction.

Citizens are apt to remember only that their personal rights are based upon and provided for by that constitutional provision which says, "One may not be deprived of life, liberty or property without due process of law; nor shall private property be taken without just compensation."

This provision, taken from the Bill of Rights, from Magna Charta, is the foundation of all our liberties. Yet there is vested in the government a "police power," which is able to invade constitutional rights of the individual. This is not the power of the police authorities, but is a term used to define that power inherent in the government for the preservation of the health, peace, morals and general welfare of the community. This "police power" is not recognized in the Constitution. But it is recognized by every court. It has been engrafted into and onto the Constitution, and under it many things are legally done which seem a violation of personal rights to the persons affected.

The margin between what is and what is not constitutional under this "police power" is very narrow, and the courts disagree and contradict each other.

RESIDENCE OF WILLIAM E. WOOD, ESQ., ARLINGTON, MASS.

THE residence of William E. Wood, Esq., at Arlington, Mass., which is illustrated on pages 58 and 59, is a house of unusual type, designed in the Colonial style. The underpinning is built of rock-faced red sandstone. The superstructure is covered with narrow clapboards on the exterior and the whole is painted white. The roof is covered with shingles and is stained a dull moss green.

The plan shows a central hall with doors at either end, the main entrance door leading into a vestibule at a lower level than the house floor, making a pleasing approach, while leading off the hall are the reception room, library, den, and dining-room, with the service part in the extension of the house.

The hall is spacious, and is made beautiful by a graceful staircase with painted balusters and mahogany rail and newel posts. The archway is supported on fluted Ionic columns, and the hall has a low Colonial wainscoting and a massive wooden cornice. The trim is painted with white enamel and the floors are of hardwood. A lavatory is placed at the rear of the hall and underneath the staircase.

The parlor, at the right of the entrance, is separated from the hall by a sliding door, glazed with small lights. The room is furnished in the French style with a low paneled dado, above which the walls are paneled and decorated. The tall, stately mantel with marble facings adds dignity to the room.

The living-room is trimmed with birch, and has bookcases built in; a bay window with seat and an open fireplace with brick facings and hearth and a mantel of good design.

The den, at the rear of living-room, is trimmed with oak, treated in the Flemish style, and has a bookcase built in, paneled seat, and a quaint open fireplace built of brick. This room contains a high paneled dado, beamed ceiling and walls, covered with burlap and wood strippings, and quaint cupboards with heavy strap hinges.

The dining-room is trimmed throughout with mahogany, and has a paneled wainscoting, above which the walls are covered with a rich tapestry, the whole being finished with a wooden cornice. The ceiling is beamed, forming deep panels. There is a very handsome open fireplace with tiled facings and mantel and an overmantel to ceiling; opposite the fireplace there is a china cabinet built in, with cupboard and drawers underneath the counter shelf, and above these are shelves enclosed with glass. The butler's pantry is fitted with sink, drawers, dressers, etc. The kitchen and its dependencies are fitted complete with all the best modern conveniences, and is up to date in every respect, having the latest cooking apparatus, and electric appliances. The sewing-room off the rear hall is a convenience.

The second floor contains five master bedrooms, large closets, linen closet, two bathrooms, and two servant bedrooms, with a private staircase. The bathrooms have porcelain fixtures and exposed nickelplated plumbing. There are a billiard-room, three bedrooms, trunk room, bathroom and store closets on the third floor. The cellar contains the laundry, heating apparatus, fuel rooms, and storage closet.

One of the interesting features of the scheme is the French window in the dining-room, which opens into the rose garden, and which is enclosed by a terrace railing and contains seats and latticed shelter, and from the door at the rear of the house the spacious piazza is reached for the private use of the family, and forms access to the formal garden, with pergola and fountain.

Messrs. Gay and Proctor, architects, 21 Bromfield Street, Boston, Mass.

A BEAUTIFUL ROOM.

A beautiful room is described by Robert Hichens in *The Woman with the Fan*: "A chamber rather barely furnished and hung with blue-gray linen, against which were fastened several old Italian pictures in black frames. On the floor were some Eastern rugs, in which faded and originally pale colors mingled. A log fire was burning on an open hearth, at right angles to which stood an immense sofa with a square back. This sofa was covered with dull blue stuff. Opposite to it was a large and low armchair, also covered in blue. A Steinway grand piano stood out in the middle of the room; it was open, and there were no ornaments or photographs upon it. Its shiny, dark case reflected the flames that sprang up from the logs. Several dwarf bookcases of black wood were filled with volumes, some in exquisite bindings, some paper covered. On the top of the bookcases stood four dragon china vases filled with carnations of various colors. Electric lights burned just under the ceiling, but they were hidden from sight. In an angle of the wall, on a black ebony pedestal, stood an extremely beautiful marble statuette of a nude girl holding a fan."



The Garden

THE GARDEN MONTH BY MONTH—MARCH.

DEFINITE work and planning for the spring and summer can no longer be neglected, for the spring will soon open, and then real work will begin in active earnest. The garden season is, in fact, about to open, and the real pleasures of the garden will soon be realized. Just now it is catalogue season, when the big seedsmen are weighting the mails with tons of gaily colored and handsomely illustrated catalogues. Showy as much of this literature is, it has real value. It recalls old friends and creates new ones. It suggests what to do in the garden, and it is filled—each one—from cover to cover, with all sorts of pleasurable suggestions and delightful things to grow and possess.

The trouble with the cataloguer is his persuasiveness. Few advertisements are so attractive as those of the seedsman and florist. They appeal directly to every one interested in flowers. Every flower-lover reads them, and is immediately seized with an uncontrollable longing to purchase the latest novelties. The ease with which such plants may be grown is invariably set forth with moving simplicity. The most wonderful flowers, in fact, can be had at very small cost and with smallest expenditure of labor. And why not have them? Forthwith the money is gathered together and the plants obtained and results awaited.

It would be a mistake to say that failure will follow; because sometimes it does not, and then, sometimes it does. The fact is, the proprietor of the small garden will do best to keep to the "old favorites." The beauty of common plants is very great. The ease with which most of them are grown has reduced them to the "common" class. But what of that? A flower is a flower, and a successful "common" flower is infinitely to be preferred to a rarity that will not mature. The specialist can, of course, concern himself with all sorts of unusual plants, and will derive the utmost delight therefrom; but the man or woman who has only a small garden, and who must carve out time from a busy day in which to give it attention, will get utmost satisfaction from traveling well-worn paths, and leaving the "novelties" for more experienced growers.

But while March is essentially the month of preparation and planning, there is still a good deal to do with the plants which have been kept over winter. Geraniums may now be grown from cuttings, planted in shallow boxes, filled with sand, placed in the sunshine and kept thoroughly moist. Seeds may be grown in the hotbeds, but next month will be better for this work in the Northern States. Easter lilies should have a cupful of weak liquid manure weekly, and should be kept cool in strong sunshine. If they are maturing slowly, place the pots in hot water; if they are getting along too rapidly, keep them in the shade and cool, watering sparingly. Toward the end of the month chrysanthemums may be brought up from the cellar and started. Canna roots should be examined, the decayed parts cut off, and the wounds dusted with charcoal. At this time, also, all tuberous roots may be started in the South.

PRESIDENT ROOSEVELT ON FOREST PRESERVATION.

At the late Forestry Convention, in Washington, President Roosevelt said: "No man is a true lover of his country whose confidence in its progress and greatness is limited to the period of his own life, and we can not afford for one instant to forget that our country is only at the beginning of its growth. Unless the forests of the United States can be made ready to meet the vast demands which this growth will inevitably bring, commercial disaster is inevitable. In a word, both the production of the great staples upon which our prosperity depends and their movement in commerce throughout the United States are inseparably dependent upon the existence of permanent and suitable supplies from the forest at a reasonable cost. If the present rate of forest destruction is allowed to continue a timber famine is obviously inevitable. Fire, wasteful and destructive forms of lumbering and legitimate use are together destroying our forest resources far more rapidly than they are being replaced. What such a famine would mean to each of the industries of the United States it is scarcely possible to imagine. And the period of recovery from the injuries which a timber famine would entail would be measured by the slow growth of the trees themselves. I ask, with all the intensity that I am capable of, that the men of the West will remember the sharp distinction I have drawn between the man who skins the land and the man who develops the country. I am going to work with, and only with, the man who develops the country. I am against the land skinner every time."

The House Interior

HOUSEHOLD DECORATION.

WILLIAM MORRIS, points out G. H. Martin, in a paper read before the Liverpool Architectural Society, brought the conventional treatment of natural forms to perhaps the highest point of excellence. His designs were mostly based on flowers and plants, and though distinctly conventionally treated, the particular flower was always clearly recognized. Morris seemed not only to conventionalize the particular flowers and leaves of his subject, but to decoratively treat their very growth. The distribution of the rose on the "Trellis," his first design, is as it grows, and the mingling of the jasmine and another plant are as they intertwine in nature. In fact, in Morris's designs there seems indicated all the peculiarities of the plant almost more clearly than if naturally or imitatively rendered, and in perfect good taste. Mr. Norman Shaw, writing on decoration and referring to wallpapers particularly, states that William Morris was "a great man, who somehow delighted in glaring wallpapers." This statement is only partially, if at all, true. Many of Morris's designs are not only very low in tone, but even when he employs bright colors they are so wonderfully well balanced as to be in no case glaring. To the excellence of the designs of Morris and his contemporaries, the fashion of a few years ago for covering all large surfaces with patterns may be due; but it is equally probable that a distaste for the old melancholy oil-painted walls and naturally-treated moiré and flower wallpapers that preceded them produced it. Whatever the cause, it was a great artistic improvement.

Because a design is good of itself, however, it does not follow that it is applicable everywhere; in fact, there has been a reaction against this excess of ornament. The older belief, that good design consists of patterns repeated *ad libitum*, has changed to the idea of absolutely plain surfaces—a state of things even worse than the first. There can be no doubt, however, that too much ornament is objectionable, and we are realizing this fact—that the walls of our room should, in most cases, be quiet and simple, and act as backgrounds to the people and articles in the room. When ornament is introduced it should be good, not excessive, and placed in positions so as not to interfere with other and more important objects. A simple pattern is preferable to an absolutely plain surface—it is always an enrichment, and allows the introduction of various tones of color, instead of one hard and even effect. It also gives the opportunity of softening the hard and even effect that one color always produces. The pattern should, however, be unobtrusive, so as not to assert itself, but enrich or neutralize and improve the general tone.

Not only is some ornament good of itself, but there never was a time when it was produced so well and so decoratively as at present. The stenciling and wallpapers as examples; there are methods of producing and realizing both designs and color entirely absent from the production of a few years ago. In decorative work, too, there are methods now adopted which are a distinct advance, and really artistic in their aims; the process of scumbling, by which hard effects are softened; the use of transparent colors, by which much richer effects are obtained than by the older opaque colors used alone; the blending of colors, and the better drawing of ornament.

As regards the decoration of ceilings, the most remarkable point of modern times is, the large use of relief ornamental plaster and the many cheaper materials imitating it. A design specially produced in plaster is, of course, satisfactory; it can be made to fit the space, and the design be correct in scale and style. In the cheaper material, however, this is frequently not the case, and often the design is abruptly cut off at the cornice; but all these advantages and disadvantages are so well known that I do not propose to say more than to repeat that relief ornament is a conspicuous item of modern decoration. The point I wish to refer to is that practically all relief ceilings and friezes are finished white. Is white more satisfactory than color? The idea is, no doubt, that light comes from above, and that our ceilings are a sort of reflectors whence the light is reflected, and we receive it from the same direction as we do in the open air. But the light outside is not white, and it is constantly changing. It varies from blue to green, purple, etc., according to the color of the sky and landscape reflecting it. This is not commonly thought of, and to appreciate it you have only to remain in, say, a white tent for a short while to understand and feel the awful monotony of it, and appreciate the ever-varying quality of the light outside. Snow-

covered land is somewhat similar. If you remain long in a room with an absolutely white ceiling and deep frieze, the effect is analogous to the sensation experienced from being in the white tent.

It is a physical fact that all our color sensations should not be excited together, as in the case with white, but that a change from one color to another is necessary to our eyes, so that the different nerves may be relieved. Of course, in the case of our white ceilings, even the whitest of them is very far from intense white. They are practically gray tinged with various colors reflected upon them, and there is, of course, the counteracting influence of the lower part of the walls, floor, and furniture; but a large surface of white is depressing and hurtful to the eye.

The decoration of ceilings has always been a subject of difference. Sir Martin Conway, when in Liverpool as Professor of Art, had, I believe, a black ceiling on one of his rooms. Mr. William Morris once told me that it was difficult to beat whitewash. Only recently I heard of a red ceiling.

Fifty Suggestions for the House

10. CABIN SITES.

THE best cabin site that can be chosen is the shore of a lake or beside a stream. In making such a selection the liability of a running stream to overflow its banks in the event of heavy rains must be taken into consideration, and the home set up beyond the possible danger of floods. As a matter of course, a heavily wooded spot will be chosen, but one should not be lured by the cool of the forest into rearing his little temple in the heart of the wilderness. Better build it on the outskirts of the woods than in the midst of them. Rather have it on the edge of a wooded copse, with a spreading tree or two between its front and the open. In the parching days of summer the sight of the rising and setting sun will be a delight, and the gloom of the forest at night will be relieved by the light of moon and stars. The sun will keep the cabin healthful. An elevation should always be chosen for a cabin site. A shallow trench, say eighteen inches across the top, will further expedite the passing of the water after a heavy storm, and, if encircling the cabin, will also serve as a barrier against the near approach of forest fires.—Barton Cheyney.

11. DRAPERIES.

THE quality of the draperies must depend upon the nature of the trimmings. Tapestry, velveteen, corduroy, silk, velours, denim, cotton, taffeta, mercerized cotton, armure, damask, cretonne, or embroidered materials are proper, but no textile should be used which would create a stuffy impression. It is better to have the curtain especially made. A good pair of ready-made curtains is only found occasionally. Never be tempted to purchase cheap chenille curtains with fringe and border. There is a thin Japanese pink gauze of soft and delicate tones, covered with painted flowers or figures, which, while screening the hall, does not darken it.—Lillie Hamilton French.

12. TILE ROOFS.

For the American climate, with its violent winds, drifting snow-storms, and intense frosts, often following a warm rain, the tiles should be hard-burned or "brown," as they are called in England, and laid in cement; and, as the tiles are heavy, comparatively strong rafters are needed to support them; but such a roof, with copper flashings where necessary, will endure often for centuries, and is practically fireproof.—T. M. Clarke.

13. ORIGINALITY IN DESIGN.

A VERY fruitful cause of failure is the effort to be original. In the loathsome distortions of fashion we see daily the result of this attempt to originate new forms, simply for the sake of novelty, without the slightest reference to any feeling for beauty or fitness. Originality has no value other than a purely commercial one, unless the original thing has advantages over the commonplace. Most of the things which we have about us show unmistakably that their designers went to work in the wrong spirit from the very first. We see at a glance that the position taken up was this. The designer has said to himself, "This is generally done so and so, in such and such a manner. Now, how can I modify this to make it in some degree original? Where can I introduce a little novelty?" No good result was ever yet arrived at by any one who took up this position.—Barry Parker.

New Books

A BOOK ON ESTIMATING.

HODGSON'S ESTIMATOR AND CONTRACTOR'S GUIDE FOR PRICING BUILDER'S WORK. By Fred T. Hodgson. Chicago: Frederick J. Drake & Co., 1904. Pp. 254.

Mr. Hodgson, who has long been known as a useful writer on subjects connected with the practical aspects of building, has produced a serviceable work on estimating of quite unusual value. His purpose, as stated in the preface, has been to place within the reach of every workman of experience an opportunity of qualifying himself to undertake the preparing of figures for work, so that he can make his tenders within the limits of reason, so that, only with a pen or pencil and this book, he may be able to figure out and price a set of quantities in short order.

The introduction is followed by some useful exercises in the mensuration of surfaces, and then the art of estimating is attacked in detail, with an abundance of concise information and many practical illustrations. The builder and workman will find the book to have great practical value, and the householder about to build will, if he but look through its pages, gain a new idea of the difficulties of the building art, and will, perhaps, undertake his venture with more open mind.

THE HARDWOOD FINISHER.

THE UP-TO-DATE HARDWOOD FINISHER. ILLUSTRATED. By Fred T. Hodgson. Chicago: Frederick J. Drake & Co., 1905. Pp. 98 + 209.

This book is practically an expansion of an earlier essay by the same author published under a similar title some years ago. It is divided into two parts, the first giving rules and methods for working hardwoods, with descriptions of tools required, the method of using them and how to sharpen and care for them. It tells how to choose hard woods for various purposes, and how to work and properly manage veneers. It gives the proper use of glue, with directions for preparing it; tells how blind or secret nailing is done and how to sharpen and use scrapers of various forms, with illustrations showing tools and how to handle them properly. The second part treats of filling, staining, varnishing, polishing, gilding, enamelling and finishing all kinds of workwork. It gives directions for renovating old work, re-polishing, re-varnishing and wood finishing generally. It presents a short treatise on dyeing woods in various colors for inlaying and marquetry work, with rules for making staining dyes, fillers, and polishes. Notes are added on the treatment of hardwood floors, waxing, polishing, shel-lacking and general finishing of hardwood in all conditions. The problems of wood finishing are very completely treated. The book is a veritable store-house of knowledge on its subject and has been prepared in a thoroughly practical and understandable manner.

CHILDREN'S GARDENS.

CHILDREN'S GARDENS FOR SCHOOL AND HOME. A MANUAL OF CO-OPERATIVE GARDENING. By Louise Klein Miller. Illustrated. New York: D. Appleton & Co., 1904. Pp. xiv. + 235.

The development of school gardens has become so general that this serviceable manual will supply a quite urgent demand. That the author has had much experience she considerably informs the reader in her preface. Her book rests, therefore, on the best of foundations—practical knowledge and personal experience. After some general chapters on School Gardens as a factor in Education, and School Gardens in Europe and America, the author takes up the various matters concerned with the arrangement, planting and care of the child's garden, presenting, in fact, a brief treatise on the whole subject of gardening, but always keeping the special point in view—the child's garden—well in hand. It is a book that many an older gardener and amateur will find of value, for it avoids the details which belong to a more ambitious handbook and contains a mass of valuable every-day information that is not accessible elsewhere in so convenient a form. It is a good book for every one interested in gardens, and who is not?

SPECIAL designs in furniture, carpets, and curtains are now very much the order of the day. The movement is as yet chiefly applicable to large undertakings, such as hotels and large houses, but constitutes an interesting manifestation of the tendency toward individual work. Special designs are, of course, more expensive than stock designs, but the increase in cost is not always as large as might be supposed.

Exhibitions

THE ARCHITECTURAL LEAGUE.

TIME moves on, and the twentieth annual exhibition of the Architectural League of New York opened on February 12. The chronological sequence of these shows is not without significance, for the League has now conducted a more extended series of exclusively architectural exhibitions than any other artistic body in the world. The great architectural show of Paris is a part of the Salon, and in London a small room is set aside in the Royal Academy exhibition for a small group of architectural drawings, such as would be viewed as quite inadequate to their subject in America. The League has, therefore, achieved a notable distinction in this matter which is worthy of hearty congratulations.

Municipal art, in a quite splendid fashion, thoroughly dominates the exhibition this year. A series of drawings for the improvement of New York, prepared by the City Improvement Commission, occupies the post of honor in the Vanderbilt gallery, and sets the keynote for the whole exhibit. Schemes and plans for other cities are also shown, including suggestions for Buffalo. Great public buildings are copiously illustrated, including many proposed for government purposes, and others undertaken by private enterprise, in which the Carnegie Technical Schools at Pittsburg hold a prominent place.

This aspect of the exhibition is particularly significant. It means not only that our architects are getting notable opportunities for the erection of handsome structures, but that a very real spirit of the value of such buildings is spreading forth throughout the entire country. It is doubtless true that some of these schemes will never be realized, but they exhibit, as a whole, a genuine study of the difficult problems presented, and they indicate a more than professional interest. The public at large is more apt to discuss these elaborate schemes and be impressed by them than take an interest in proposals for individual private buildings, no matter how well they may be presented.

The large drawings—the schemes for municipal embellishment, competitive drawings for the McKinley Memorial at Canton, great schools, railroad terminals, huge office buildings, libraries and municipal buildings—make up so large a part of the architectural exhibit that the individual house, the more modest structure which keeps the individual in personal touch with architecture, is hardly apparent. There are, of course, examples of this type of building, as there are of every leading type, but they make no marked impression on the spectator, and have, apparently, been deemed of quite secondary importance by the hanging committee, which seems to have had eyes chiefly for large things. Architectural drawings in any sense require so much space for their display, and there is such a marked tendency toward drawings large in size, that there is danger of these exhibitions being transformed into exhibits of small groups of architects without local or national significance. A showy drawing makes a brave display in such a collection, but in architectural exhibitions it is the value of the structure designed which counts, not the artistic excellence of the medium through which it is presented.

As in all previous exhibitions in the Galleries of the American Fine Arts Building, in which these shows have been held for many years, the arrangement of the exhibits follows a typical division. The first gallery is given up to decorative exhibits, and is gay with colored drawings, some in the form of cartoons for actual execution, others of the executed work itself, and still others in sketch form. The number of exhibits here is markedly less than in previous years, to the great gain of the drawings shown. More exhibits in this class are shown in the small central gallery, and the smaller rooms on either side are filled with miscellaneous objects—in metal in one room, and decorative objects in the other. One of these rooms contains a few drawings of landscape architecture—a strange disposition of a very important subject in which there is vast general interest, but which the architects who dominate the League do not yet seem disposed to give more than scant recognition to.

One of the most important branches of the exhibition is shown in the hall of the National Sculpture Society, which has been pressed into service. This consists of a series of drawings, designs, and projects, prepared under the auspices of the Society of Beaux Arts Architects by the draftsmen who are competing in the competitions conducted by this organization. The display is astonishing in the beauty of draftsman-

ship and in the interest of the original designs. The work, as a whole, shows merit of pronounced character and marvelous technical ability in drawing. Being the work of young men, all of whom are at present employed in architects' offices, they show very clearly the march of American architecture toward the monumental and the sumptuous. It is a remarkable exhibit, in every sense of the word.

A HOUSE AT IPSWICH, MASS.

THE house of Mrs. G. G. Bailey, at Ipswich, Mass., forms the subject for the illustrations on page 51. The building is of a modern conception, built in an attractive manner, and it has some interesting features, including a broad spacious piazza which extends across the front, and returns at one side. The two balconies at the second story at either side of the tower are enclosed with an ornamental balustrade with good effect. The underpinning is built of field stone laid up at random, and the superstructure is covered on the exterior framework with sheathing, good building paper, and clapboards for the first story, painted a rich reddish brown color, and white trimmings; the second story walls are covered with greenish stained shingles, and the roof, which is also covered with shingles, is stained a dark moss green of a rich color.

The hall, which is in reality a living-room, occupies the main part of the first floor, and is trimmed with dark oak. It has an open fireplace, built of brick, with tiled facings and hearth and mantel, and at one side of the fireplace there are paneled seats, over which are placed windows, and further around to the right is the front entrance. The staircase is of ornamental character, and it is separated from the main hall by a beamed archway, supported on columns, which rest on paneled pedestals, in the front of which there are seats.

The parlor is placed at the right of the entrance, and treated with old ivory finish in an artistic manner. Off the hall, and at the rear of the parlor, is the den, and beyond the sitting-room, which is placed at the quiet end of the house; the latter is trimmed with cypress and is stained a soft brown color, and it has an open fireplace.

The dining-room is trimmed with oak, finished with a black Flemish treatment. It has a china-closet and buffet combination built in at the side of the room. The butler's pantry is fitted complete, and forms the separation between the dining-room and kitchen; the latter is provided with all the best modern conveniences. The second floor contains four bedrooms, which are treated with white paint, and a bathroom furnished with porcelain fixtures and exposed nickelplated plumbing.

The third floor contains the servant quarters and ample storage space. A cemented cellar contains the heating apparatus, fuel rooms, cold storage, laundry, etc.

Mr. Herbert C. Chivers, architect, Wainwright Building, St. Louis, Mo.

HOUSE AT ELDORA, IOWA.

THE cottage illustrated on page 55 was erected for George Francis Smith, Esq., at Eldora, Iowa. The design is simple in form and treatment. The underpinning is built of red brick laid in white mortar. The first story is clapboarded and painted a soft gray, while the second story is shingled and stained a dull greenish gray color; the trimmings are painted white, and the roof is stained a dull green.

There is an attractive porch at the front and the side, and they are so arranged as to permit the sunlight to enter each room, without precluding the possibility of having a roof over the porches. The plan shows a central hall, entered through a vestibule which is broad and spacious. This hall is trimmed with cypress and is stained and finished in Flemish brown. The hall contains an ornamental staircase with square balusters and newel post, and at the side of which there is a paneled seat. Opening from the hall there is the reception-room, with an opening provided with Colonial columns, which support an archway; opposite this archway there is a mirror extending from the floor to the ceiling, and at either side of which there are similar columns.

To the right of the entrance is the living room, provided with an open fireplace built of pressed brick, with the facings of the same extending from the floor to the ceiling, and a mantel formed in part, with good effect. The dining-room, opening from the living-room, has a large pantry fitted with a cupboard, dresser, drawers, etc. This pantry forms the entrance to the kitchen, which is fitted with all the best modern improvements.

The second floor is trimmed with poplar and is treated with white enamel paint, and it contains four bedrooms and a bathroom, which is fitted with porcelain fixtures and nickelplated open plumbing. The attic contains ample space for storage. The basement is provided with the heating apparatus, fuel rooms, vegetable cellar, laundry, etc. Cost, \$2,800 complete.

Mr. A. M. Worthington, architect, First State Bank Building, South Haven, Mich.

Correspondence

A CEMENT COTTAGE IN TEXAS.

J. C. B. T. writes: I want to build a house in Swiss cottage style, story and a half high, low ceilings, ventilation near the ceiling; of cement, with pebble finish outside, called by the people here "pebble-dash," the pebbles being fastened on the outside by the last coat. There are two or three houses here which seem to be substantial, though they have not stood the test of time yet. I think I am correct when I state that lath never decay so long as the plaster remains on them. Will cement have the same preservative effect as lime and plaster? My plan of the wood part of the wall is to set the studding 12 inches from center to center, then cover it with 1 x 3 inch strips at an angle of 45 degrees, 3 inches apart, the lath in the opposite direction at the same angle. This will give a 3-inch space which will let the cement pass through and clinch, and a 3-inch space where the cement will only go between the lath and strike against the 3-inch strip, or possibly a little better would be put to a strip of lath in the center of the 3-inch strip, holding the lath off a little and giving the cement a chance to pass under the lath for one inch on both sides.

My reason for not putting 1 x 12 boards close together is from the fact that when the wet plaster goes on the boards will cup and cause the wall to crack, from absorption of water from the cement; secondly, the 3-inch strips are much cheaper than the solid board.

One of the houses here shows some signs of cracks which I attribute to that. There is no question about a continuous cement wall being durable, in my opinion. I helped to build one of that class fifty years ago, and it was my pleasure to see that same wall this last spring. There was not the least sign of disintegration. It was built of coarse stones, many large boulders in the wall, which were hard to fasten, as they were quite round. The house mentioned was in the northern part of Illinois.

The question with me now is, Will this dry, warm climate in Texas affect the cement differently? Are such Swiss cottage plans to be had without special drawings being made? Is there anything published of recent date on such cement work that we recommend? What is your opinion of my wood frame or wall? How am I to test the quality of cement? Any information on the above mentioned will be valuable.

THE TECHNICAL QUESTIONS PROPOUNDED IN THIS LETTER ARE ANSWERED BELOW.

LATH.—We can give no opinion as to the effect of Portland cement plaster on wood lath. Lime does preserve lath, but we have never used cement on anything but metal lath or masonry backing.

SHEATHING.—The arrangement of diagonal strips 1 x 3 inches with 3-inch space seems to be a good one, but we would advise the use of a lath in the middle of this strip, so that the plaster would be clinched along the entire length of lath except on this bearing lath.

If a perfectly tight house is required we recommend the use of 1 x 8 inch matched sheathing with furring strip or lath on top, so that the plaster would not touch the boarding.

CLIMATE.—The warm, dry climate of Texas should not affect the cement injuriously. There has been extensive use of cement in such a climate, and experience shows that it is more durable in a warm climate than in a situation where there are alternate extremes of temperature.

TESTING.—The testing of cement is not possible without some special apparatus, except, of course, the rough judgment of an experienced mason. A standard cement testing mold should be obtained in which to cast briquettes which have an hour glass form with the minimum area in the center of one square inch. The cement should be mixed neat; that is, without sand, with about one-fifth of its bulk of water, and pressed tightly into the mold, removed at once and allowed to dry one day in the air and then placed in water for six days. A good Portland cement tested after seven days as above should support a weight of 300 pounds in suspension. A rough approximation may be made by suspending a platform from a briquette, loading this gradually and weighing the load at which the briquette breaks. An experienced mason would be able to judge approximately of the strength of cement by breaking a pat of it with his trowel. No test should be made on any material that has been mixed less than seven days. —Editor BUILDING MONTHLY.

New Building Patents

The following list of New Patents relating to Building and Sanitary Science is prepared expressly for the SCIENTIFIC AMERICAN BUILDING MONTHLY by MUNN & Co., Solicitors of American and Foreign Patents.

A PRINTED COPY of the specification and drawing of any patent in this list, or any patent in print issued since 1863, will be furnished from this office for 10 cents, if exact date or number is furnished. Remit to MUNN & Co., 361 Broadway, New York.

BRICK, STONE, AND TILE.

COMBINATION TILE FOR FLOORS, WALLS, ETC.	Dickey and Derry, Barberton, Ohio.	January 10	779,536
STRUCTURAL BLOCK.	C. F. Lincott, Chicago, Ill.	January 10	779,613
IMITATION TILING.	J. Singer, Los Angeles, Cal.	January 10	779,883
FIRE BRICK.	T. A. Widdows, Stockton, Cal.	January 31	781,255
BUILDING BLOCK.	G. F. Fisher, North Tonawanda, N. Y.	January 31	781,413
BUILDING WALL AND CONCRETE BLOCK FOR SAME.	Miracle and Dow, Sioux Falls, S. D.	January 31.	12,310

CARPENTRY.

WINDOW SASH.	S. E. Roe, New York, N. Y.	January 3	779,317
REVERSIBLE WINDOW SASH.	A. Iske, Lancaster, Pa.	January 10	779,426
WINDOW TRIP.	R. R. Lee, Merrimac, Mass.	January 10	779,549
SELF CLOSING SASH FOR WINDOWS.	C. D. Pruden, Baltimore, Md.	January 10	779,801
WINDOW.	M. J. Carter, St. Louis, Mo.	January 17	780,264
STALL FLOOR.	A. J. and M. B. Lansing, Ionia, Mich.	January 17	780,360
WINDOW.	Felkel and Langer, Pittsburg, Pa.	January 24	780,605
CASEMENT WINDOW.	I. Wroblewski, Warsaw, Russia.	January 24	780,696
DISAPPEARING WINDOW.	J. J. Müller, New York, N. Y.	January 24	780,902
REVOLVING DOOR.	H. J. Numerich, Minneapolis, Minn.	January 24	780,906

CONSTRUCTION.

DEVICE FOR ATTACHING ROOFING.	T. S. Howard, Lombard, Ill.	January 3	778,863
PILLAR.	A. Vetterly, New Buffalo, Mich.	January 3	778,925
BUILDING CONSTRUCTION.	A. C. Warren, Chicago, Ill.	January 3	778,926
WINDOW CONSTRUCTION.	E. H. Lunken, Cincinnati, Ohio.	January 3	779,227
BUILDING CONSTRUCTION.	C. R. Elliott, Richmond, Va.	January 3	779,268
TENT COTTAGE.	C. Schram, Denver, Col.	January 10	779,446
ROOF BRACKET.	T. H. Kingston, Somerville, Mass.	January 10	779,481
WOODEN COLUMN.	R. Hegener, Chicago, Ill.	January 17	780,176
CORNER STRIP OR BRAD FOR PLASTERED WALLS.	J. A. Hunt, Westboro, Mass.	January 17	780,291
CHIMNEY.	G. Palladino, El Paso, Texas.	January 17	780,378
CEILING PLATE.	C. H. Eastman, Boston, Mass.	January 24	780,643
WALL CONSTRUCTION.	W. H. Fisher, Los Angeles, Cal.	January 24	780,648
METALLIC WINDOW FRAME AND SASH.	P. A. Tracy, New York, N. Y.	January 24	780,840
SECTIONAL WALL.	J. A. Carter, Summit, N. J.	January 24	780,936
METALLIC ROOFING PLATE, ETC.	H. C. Ferron, Amsterdam, Netherlands.	January 24	780,946

ELEVATORS.

SIGNAL SYSTEM FOR ELEVATORS.	B. J. Foley, Pittsburg, Pa.	January 10	779,592
AUTOMATIC MECHANISM FOR ELEVATORS.	D. H. Darrin, New York, N. Y.	January 31	781,051
SAFETY APPLIANCE FOR ELEVATORS.	A. A. Roth, Baltimore, Md.	January 31	781,366
AUTOMATIC ELEVATOR HATCH COVER.	T. Walker, Portland, Oregon.	January 31	781,477

FIREPROOFING AND FIRE EXTINGUISHMENT.

AUTOMATIC SAFETY CURTAIN APPLIANCE.	Garnsey and Tracy, Rochester, N. Y.	January 3	778,852
FIREPROOF CEILING OR THE LIKE.	J. Nolte, Strassburg, Germany.	January 3	778,885
AUTOMATIC FIREPROOF WINDOW.	J. W. Watkins, Philadelphia, Pa.	January 3	778,927
WALL FOR THE INTERIOR OF FIREPROOF BUILDINGS.	F. C. Caine, Cleveland, Ohio.	January 3	779,117
FIRE SHIELD.	P. Wendling, Dayton, Ohio.	January 10	779,452
PROCESS OF FIREPROOFING WOOD.	G. Blenio, New York, N. Y.	January 10	779,761
FIRE EXTINGUISHING APPARATUS.	C. A. Teal, Philadelphia, Pa.	January 17	780,073
AUTOMATIC FIRE SHIELD.	C. A. Teal, Philadelphia, Pa.	January 17	780,074
SAFETY SYSTEM FOR THEATERS.	Weiss and Zimmer, Chicago, Ill.	January 24	780,546
FIREPROOF FLOOR AND CEILING.	J. F. Kleine, Berlin, Germany.	January 24	784,566
FIREPROOF BUILDING CONSTRUCTION.	J. Babiczky, Kansas City, Mo.	January 24	780,700
FIREPROOF STAIRWAY.	J. Paccardi, Boston, Mass.	January 24	780,811

HARDWARE.

SCREWLESS KNOB.	A. Arens, New Britain, Conn.	January 3	778,942
LOCK.	L. Faust, Rockford, Ill.	January 3	779,151
LOCK.	B. F. Merritt, East Orange, N. J.	January 3	779,173
SASH FASTENER.	N. J. Lindbeck, Bishop Hill, Ill.	January 3	779,291
SPRING HINGE.	E. Bommer, New York, N. Y.	January 10	779,762
LOCK.	H. Barry, Chicago, Ill.	January 10	779,899
HINGE.	I. E. Sloan, Johnstown, Pa.	January 17	780,136
HINGE.	T. D. Duffy, Chicago, Ill.	January 17	780,413
WINDOW BLIND FASTENER.	T. Euphrat, Norwalk, Conn.	January 17	780,417
SASH LOCK.	O. Kulhanek, Brooklyn, N. Y.	January 24	780,951
LATCH AND LOCK.	A. J. Campbell, Washington, D. C.	January 31	781,185
LATCH AND LOCK.	W. H. Dalrymple, Branchville, N. J.	January 31	781,271

HEATING AND VENTILATION.

WINDOW VENTILATOR.	Jones and Ramsey, Pittsburg, Pa.	January 3	779,046
VENTILATOR.	S. H. Jacobson, New York, N. Y.	January 10	779,653
VENTILATOR LIFTER.	C. A. Black, Jr., Hightstown, N. J.	January 17	780,151
VENTILATING CORNICE OR STRIP.	T. H. Wilcox, Brooklyn, N. Y.	January 17	780,247

AIR COOLING APPARATUS.	A. Siebert, St. Louis, Mo.	January 17	780,385
COMBINED HOT AIR AND WATER HEATER.	A. B. Vanderhood, Toledo, Ohio.	January 24	780,587
RADIATOR REGULATING DEVICE.	A. C. Walworth, Jr., Newton, Mass.	January 31	781,037
HEATING APPARATUS.	J. D. York, Chicago, Ill.	January 31	781,169
FURNACE.	S. P. Smith, Waterford, N. Y.	January 31	781,308
HEATING STOVE.	W. J. Smith, E. St. Louis, Ill.	January 31	781,309
RADIATOR.	W. R. Kinnear, New York, N. Y.	January 31	781,345
STEAM HEATING APPARATUS.	W. Shurtleff, Moline, Ill.	January 31	781,467

MISCELLANEOUS.

PAINT.	R. Warnock, Westboro, Mo.	January 10	779,752
PAINTERS' BUCKET BRACKET.	J. H. Laney, Savannah, Mo.	January 17	780,205
DISAPPEARING STORE FRONT.	F. L. Stone, Denver, Col.	January 24	780,538
WALL HOOKS.	F. C. Palmer, Brooklyn, N. Y.	January 24	780,956, 780,957, 780,958, 780,959, 780,960

PLUMBING.

CLOSET ATTACHMENT.	C. G. Lanau, New Orleans, La.	January 3	779,048
WATER CLOSET SEAT.	M. D. Helfrich, Evansville, Ind.	January 3	779,220
AUTOMATIC THAW-OUT FOR WATER PIPES.	W. J. Robinson, Smyrna, Del.	January 3	779,316
FLUSHING TANK FOR WATER CLOSETS.	F. A. Schosow, Detroit, Mich.	January 31	781,099
URINAL OR THE LIKE.	W. Beetz, Vienna, Austria-Hungary.	January 31	781,326
Faucet.	A. E. Isaacs, New York, N. Y.	January 31	781,525

TOOLS.

PLANE.	J. A. Traut, New Britain, Conn.	January 3	778,921
CARPENTERS' TOOL.	E. L. McDaniel, Lenora, Kan.	January 17	780,054

AN ELIZABETHAN HOUSE AT PLAINFIELD, N. J.

THE house which is illustrated on pages 56 and 57 has been erected for David H. Rowland, Esq., at Plainfield, N. J. It is designed in the Elizabethan type, and is built of brick, stucco and shingles. The underpinning and chimneys are of brick with black headers, laid with white joints and in a Flemish bond. The superstructure is of stucco, of a soft gray color, with trimmings of a natural woody brown. The roof is covered with shingles and is stained a dull red.

The entrance hall is a central one, and is entered through a vestibule. It is trimmed with chestnut and has a paneled wainscoting and a beamed ceiling. The staircase has a handsome carved newel post, etc.

To the left of the entrance is the reception-room, which is trimmed with chestnut, and is finished in a forest green. The walls are covered with burlap and finished in gilt. The fireplace is furnished with a mantel facing, tile hearth, and a mantel of special design, with a bas-relief panel.

The reception-hall, at the opposite side of the hall, and corresponding with the reception-room, is also trimmed with chestnut, the same as the hall, and it has an open fireplace, furnished with black and yellow marble, a hearth of Welsh tile, and a mantel of excellent design.

The living-room occupies the entire depth of the house, and is trimmed with chestnut. It has bookcases built in, a paneled wainscoting and ceiling beams. The walls above the wainscot and bookcases are covered with flock paper with a soft harmonious effect. The fireplace is built of brick with the facings of the same, and a hearth of Welsh tile. It has a handsome mantel made from special design with fine carvings. On either side of the fireplace there are semi-bay windows which have paneled seats, and doorways opening on to the veranda.

The dining-room is trimmed with chestnut, and has a high paneled wainscoting furnished with a plate-rack and a beamed ceiling. The space between the plate-rack and the ceiling is covered with a tapestry effect. The fireplace is furnished with green marble facings, Welsh tile hearth and a mantel and a paneled overmantel, in the center of which is placed a family portrait.

The billiard-room is also trimmed with chestnut and is furnished with a brick fireplace and mantel. The butler's pantry, of unusual dimensions, is fitted with sink, drawers, cupboards, and closets. The kitchen and its dependencies are fitted with the best modern conveniences. There is also, off the kitchen, a servants' dining-hall.

The second story hall is finished the same as the hall in the first story, while the remainder of the second story is treated with white enamel paint. This floor contains one large room, separated in the center with Ionic columns placed on pedestals, forming two apartments, one of which has an open fireplace. Besides this room there are four bedrooms, dressing-room, and two bathrooms. The servants' quarters, which are isolated from the main house, are placed over the kitchen extension, and consist of a linen closet, three servants' bedrooms, and bathrooms. The bathrooms are fitted with a tiled wainscoting, paved floor, porcelain fixtures and exposed nickelplated plumbing.

The third floor contains three bedrooms and bathroom. A cemented cellar contains a laundry, hot-water heating apparatus, fuel rooms, cold storage, etc.

Mr. A. L. C. Marsh, architect, 97 Nassau Street, New York.

Publishers' Department

READY MIXED PAINTS, VARNISHES, ETC.

THE requisite high grade quality of paint for outside and inside use is made from absolutely pure linseed oil, the best lead and zinc, and the finest color pigments, all of which ingredients must be properly ground and blended. Yet, to make this proper combination requires many years of experience in acquiring painting rules and working adequate machinery. The harmonizing of tints, the compounding of substances, and the thorough mixing may be occasionally done on a small scale by one who does his own painting, but it may be generally laid down as a fallacy that "I mix my own paint," or, "My painter always mixes his own materials." Even paint made by manufacturers in the form of white lead, with oil and turpentine and some coloring pigment, may be stirred but not properly mixed, on account of lack of facilities. It takes powerful machinery to perfectly mix and grind, and consequently those who paint properly must go to a source that is able to supply the finished article in a convenient form, of right consistency and of lasting efficiency. The means for manufacturing paint in an unsurpassed quantity and quality has been secured by the well-established William Connors Paint Manufacturing Company, of Troy, New York. Twenty-five years have given the experience needed for carrying on a vast business, with constantly improving machinery. The output is enormous and covers a surprising range of grades in all branches of the paint, varnish, cement, putty, and enamel industry. The several factories cover a block and a half of street and river frontage. Transportation facilities are provided in railroads, river barges, and canal portage, with which they are in close connection. Several hundred skilled workers are employed. The local patronage of the industry is quite marked, while the trade is most extensive in the Eastern States, Canada, and New York, with Western interests well developed. The company makes the "American Seal Brand" of goods. In this line we mention "Ready Mixed Paint," made from pure white carbonate of lead, oxide of zinc, and pure linseed oil. It has great covering capacity, body, and durability, and comes in hundreds of different colors and shades, all specially guaranteed absolutely fast color and waterproof. "Roof Paint" is made to protect roofs. It will stand the most extreme of stormy weather and sunshine without leaking, checking, lifting, or peeling. "Floor Paint" dries hard and firm, gives a surface that resists washing, scrubbing, and the wear and tear of footsteps. It is sanitary, cleanable, and attractive, and is as good for porches, steps, decks, etc., as it is for regular floor use. "Carriage Gloss Paint" produces results in one operation nearly equal to a separate paint and varnish coat; gives a beautiful, bright, and glazed finish that resembles enamel but will not scale or crack, and is hard to scratch. "Anti-Rust Paint" is adapted for use on ironwork exposed to dampness and water, and is particularly good when employed on structural iron, bridge work, fences, windmills, and iron-covered buildings. Good enough for the most attractive "display" job, it is yet sufficiently cheap for any purpose. "White Lead Putty" is of that finer sort that will not shrink, crumble, crack, discolor, nor show nail holes. It is made of pure linseed oil, selected whitening, and white lead; and is packed in barrels, tubs, bladders, and in 12½, 25, and 50 pound pails. The output includes japans, wood and iron fillers, shingle stains, mortar colors, and a very important line of products called the "American Seal Specialties," comprising "Asbestos Fireproof Furnace Cement" for use in properly mounting furnace and range castings. Smokeless and odorless "Stove Putty," to be used when manufacturing or repairing stoves of any kind or make. "Asbestos Stove Lining," for use in lining firepots in stoves and ranges, and in making them gas tight. It does not crack, clinker, nor burn out. "Boiler Pipe Covering Cement," a perfect non-conductor. Saves coal and steam; is easily mixed with water and applied with a trowel, and protects against fire. "Stove Pipe Enamel," easily applied, and produces a rich, glossy surface. "Perfection Stove Polish" is a jet black, that will not smoke nor burn off, and is easily applied with a brush or cloth. "Elastic Oil Cement" cares for bedding slate and tile roofs, repairs leaks around chimneys, skylights, and fire walls, and is an excellent pointer-up. This strong list concludes with "Paint for Boiler and Furnace Fronts," "Roof Paint," either metallic or graphite, "Graphite Paint," for use on structural iron and bridge work, and "Cold Water Paint," a pure white for employment on interior finishing of factories and public buildings. The company has much valuable information in its industrial liter-

ature, and any one interested in the products mentioned will receive booklets on request. Address, Nos. 669-675 River Street, Troy, New York.

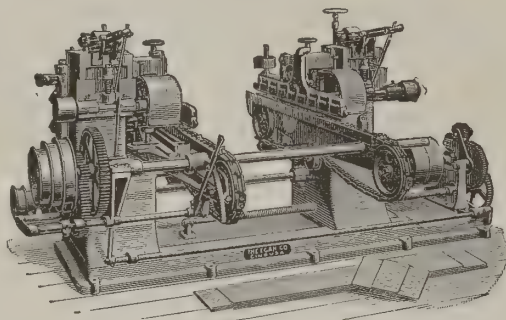
SIMPLEX CONCRETE PILES.

BUILDING experts see that there is an admirable difference in favor of concrete piles over the relatively less costly wooden ones, and it is demonstrated by the very rapid adoption of the former in this country, notably in difficult and important enterprises. Take, for instance, the massive undertaking carried through by the Simplex Concrete Piling Company, where, in the remarkable time of three and a half months, it completed the foundations for the great River and Terminal Warehouse building, at Pittsburg, Pa. This warehouse is one of the largest structures in the world, and its requirements called for the strongest foundation possible, something vastly superior to that kind afforded by wooden piles. It took about six thousand of the "Simplex" type from thirty to forty-five feet in length, to support this heavy construction. It would not be giving too much praise to say that this work furnishes to architectural engineers a new axiom in building: That no foundation problem is complex if its solution is attempted by means of concrete piles. As many as seven pile drivers worked simultaneously driving these thousands of piles under the warehouse, forcing them down to hard pan or solid bottom. Every experiment and examination showed that the ponderous shafts remained perfectly intact. Concrete piles were used to some extent in Europe before being introduced into the United States in 1902. From the highest authority it may be stated the practise of French and German engineers has been to construct the piles on the ground, casting them in a mold in which a steel skeleton for reinforcement is first inserted, and also a steel cast-iron shoe. After the piles have been hardened a sufficient length of time they are driven like timber piles, a cushioned cap being placed on top of the pile to distribute the force of the blow evenly over the concrete. In this country the practise has been thus far to construct the piles in place, by driving a hollow steel cylinder, which retains the walls of the hole in place until the concrete has been deposited and rammed. As the filling in of the concrete progresses, the shell is drawn up, the lower end of the latter being always about six inches below the top of the former. If desired, a reinforcing skeleton can be placed in the shell before the concrete is poured; but the piles are very strong without it. That the character of the pile controlled by the Simplex Concrete Piling Company is destined to irresistibly impress itself on the engineering world, may also be shown in its employment in the construction of the extensive foundations of the new engineer school at Washington Barracks, D. C., and a careful study of its action was published in the Scientific American last March. It was there proved that the work at the barracks presented obstacles which could not be overcome by the use of the ordinary pile—obstacles due to the constantly changing condition of the ground, which was alternately wet and dry as a result of heavy and frequent rains. Four different types of piles are used by the Simplex Company. One type, known as the "preparatory removable" pile, is used in earth reasonably firm in its texture and free from water. A preparatory tube, consisting of a length of extra heavy iron pipe fitted with a driving-head of oak and a conical steel point of larger diameter than the pipe, is driven into the ground the needed depth, and thereupon withdrawn. The hole formed is filled with well-rammed concrete. Any desired length of pile can be obtained by driving the outer tube deep enough into the ground; and that tube can be removed with but a fraction of the force required in pulling out or planting the ordinary pile. After the rammed concrete has once set, the pile becomes literally a pillar of stone. A pile of this type, 14 inches in diameter and 13 feet 2 inches in length, successfully sustained a direct pressure of more than twenty-one tons of pig iron for ten days without any signs of settling. It sometimes happens that the fixed steel point can not be used to advantage. This is the case particularly where the earth is soft or marshy, or where quicksand or water is encountered. For this purpose a detachable point of concrete is substituted for the fixed steel point, and driven to the required depth. As the pipe is lifted out concrete is rammed home through the pipe. A head of concrete is maintained inside the pipe while it is being gradually withdrawn. In this way all water is displaced and the closing in of the sides of the aperture is avoided. In driving piles under water, the pipe, with its concrete point, is surrounded by a sheet-iron cofferdam, which latter is temporarily clamped to the pipe, and is of sufficient length to reach from above the waterline down to the firm underlying ground. The pipe is driven in until the cofferdam is embedded in the firm ground at a depth sufficient to prevent the possibility of water percolating through. The clamp is then removed, the concrete point is driven farther down to the needed depth, and concrete is filled in to the desired height. If the completed pile is to form

the base of a sea wall, the concrete is filled in only flush with the river bottom, and the sheet-iron cofferdam is then removed and used on the next pile. If, on the other hand, the pile is required to rise above the water, the dam is not removed. To lend additional stability to a pile of this construction, a cylinder of 3-inch mesh expanded metal may be embedded in the concrete, and likewise a piece of structural iron, to which the superstructure can be fastened. The address is No. 915 Pennsylvania Building, Philadelphia, Pa.

AUTOMATIC DOUBLE TENONERS AND BAND RIP SAWS.

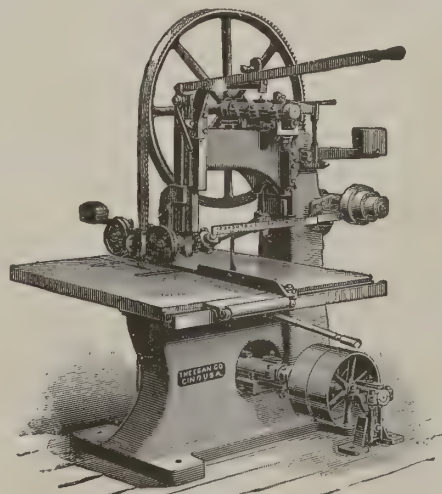
WE are pleased to show our readers in the accompanying illustration one of the most improved tenoning machines yet placed on the market. It is especially designed to meet the requirements of sash, door, and blind factories, and, in fact, all those having double tenons to cut. The makers of this machine were the first to bring tenoners to their present state of mechanical perfection; and by the great improvement of placing cut-off saws in front have been enabled to hold a leading position in this line ever since they first brought them out. The machine was patented



NO. 10 NEW PATENT DOUBLE TENONER.

June 5, 1900, and attention is invited to some of its most prominent features. It is simple in operation, requiring no expert to operate it, and is not liable to get out of order. It will work from 6 to 78 inches between shoulders of tenons, and to 20 inches wide and 7 inches thick. As it requires a double-end tenoner to make an accurate tenon, the worth of this machine will be readily appreciated. It will cut-off, tenon, and cope both ends at one operation accurately and rapidly, and without marking the work. The machine resting on a firm platen or base is insured solid support, stiffness, perfect smoothness, and freedom from vibration. The feed is of improved construction, automatic, and capable of standing much wear. Arrangement is made for working different widths and thicknesses. It can also be used as a double cut-off saw, the saws having vertical and horizontal adjustments.

To those who have ripping to do, the new machine shown in the next illustration will prove very interesting. Its makers claim it will surpass in quality and output anything in this line they are now using, and for ripping fine lumber it is far in advance of other models of this character, as it represents an entirely new departure in band ripping. It has met with unqualified success wherever installed. The machine was



NO. 1 AUTOMATIC BAND RIP SAW.

patented February 27, 1900, and October 2, 1900. It will do either light or heavy work, cut short or long pieces, and work either soft or hard wood, with no possibility of danger to the operator. Circulars should be sent for in order to grasp all its features. The thin saw blade will save an amount of kerf that will be readily appreciated by all workers of fine lumber, and will ultimately pay for the machine itself. The straining device, with knife edge balance, insures at all times an even tension on the saw blade, a thing so necessary to prolong its life, and still so seldom found. The solid lower wheel prevents vibration, receives increased momentum, and precludes the possibility of overrunning the upper. By a single movement of a lever con-

venient to the operator, the machine is changed from a self-feed into a hand-feed rip saw; and where flooring is made in large quantities, is fitted with a long table on which are rolls, for quickly returning the material. The feed rolls are placed close together, so that short work can be cut with facility. The makers, J. A. Fay & Egan Co., of Nos. 209 to 229 W. Front Street, Cincinnati, Ohio, will willingly furnish further particulars, and send free their new illustrated catalogue of wood-working machinery to those interested. The high grade wood-working machinery manufactured by this great firm comprises single machines or complete equipments, and these are especially adapted for a variety of work in many industries, such as saw and planing mills, carpenter, sash, door, and blind work, box factories, furniture, Venetian blind, coffin, chair, and bracket factories, car, railway, bridge and agricultural works, pattern shops, lead pencil and pen holder works, all vehicle builders, and pulley, spoke, wheel, and handle plants. This company is obliged in some cases, in order to introduce new and improved tools, to take in exchange machines which have only been used a short period and which are consequently termed as "second hand," although practically the same as new. To give an idea of this particular stock on hand, we mention blind and door machinery, lathes, chamfer cutters, matchers, mortisers, molders, sanders, saws, iron-working tools, dovetailers, tenoners and surfacers. To keep this firm in its unsurpassed position requires the co-operation of the brightest and most experienced minds, protected by the patent laws of every country. It takes out nearly one hundred valuable patents every year, many of which mark such distinct advances in wood-working machinery that competitors are continually infringing, in their desire to imitate the most salient features. For the protection of its own interests as well as those of the public, who may otherwise be led to purchase inferior machines, particularly band rip, scroll, and resaws, sanders, planers, and dovetailers, this great manufacturing company announces that a number of suits will shortly be begun against such infringers. To this firm's already long list of triumphs, the Louisiana Purchase Exposition at St. Louis added the "Highest Award" on Band Rip Saws, the only tool it exhibited.

ORNAMENTAL IRON AND BRONZE ELEVATORS, ETC.

A FINE line of manufacture, comprising ornamental iron and bronze, elevator cars, doors, and enclosures, iron stairs, store fronts, bank and office railings, grilles, tablets, etc., has been developed by the Standard Company, of Chicago, Illinois, and it is with pleasure we draw our readers' attention to these products. The reputation of this company is that of being a strong believer in quality, it making a point of seeing that all its output before leaving the factory is up to its high standard. The work is modern and artistic, and bears the hall-mark of that kind of success which is not to be laid to a chapter of chances. This result is in a great measure due to the perfect equipment of a works that is unsurpassed in its directing talent, skilled workmanship, and prime condition of materials. While the firm does everything in ornamental iron and bronze, it gives particular attention to the specialty of the making of elevator enclosures, cars, and doors, and furnishes an unsurpassed amount of goods in this branch of its industry. The facilities are unexcelled, and it can handle anything in electroplating work, as its tanks are unusually capacious and able to accommodate extremely large sections. Its elevator door is certainly unique in ease of action, and nothing could be more satisfactory. It is exclusively manufactured by the Standard Company and is used in many of the large office buildings. It is bound to attract attention, and is so faultless that a handler will soon realize that there is a long interval between it and the better one yet to come. It is a double sliding door, made in two sections, both sliding in the same direction, operated by a lever mechanism so that the two doors operate together, one sliding twice as fast as the other, and the two when entirely open occupy a space only half the width of the doorway. This arrangement is a very desirable one where the space is limited, and it is an absolute necessity in large stores where a wide opening is wanted for the elevator. The consummate ease with which the device works has brought it into favor with a large number of architects, and if space permitted we should like to give the names of many important buildings in the various big cities of the country where these doors are used. A request to the company would bring this and any other desired information to an interested inquirer. The firm is of the highest commercial standing, and gives the very closest attention to all orders, prepares special designs, and furnishes estimates upon application on bank interiors, office railings, and mausoleum work in addition to the products above mentioned. The extensive plant of this company is favorably situated in Chicago for transportation facilities. The address is Room 810 Railway Exchange Building, Chicago, Illinois.

PEARSON COATED NAILS have a holding power more than twice as great as any other kind. They resist the weather longer than ordinary wire nails and have other advantageous features. The coated flooring nails—under the trade name of “Leaders”—are a radical departure from the rut, and excel in every detail. They save 30% in labor and are sold at attractive prices.

J. C. PEARSON CO., BOSTON

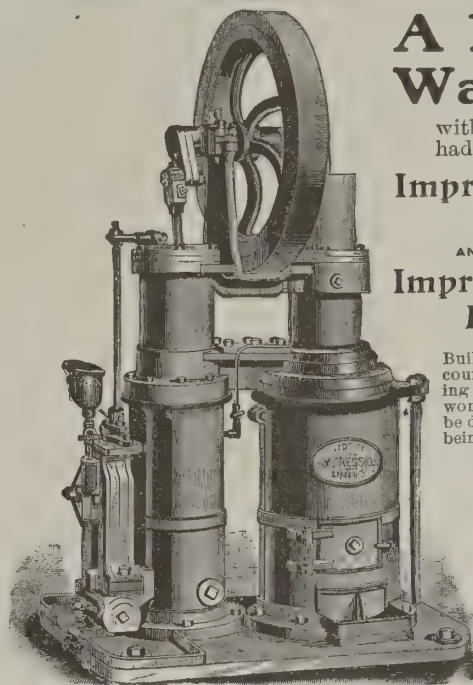
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A Never Failing Water Supply

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Built by us for more than 30 years and sold in every country in the world. Exclusively intended for pumping water. May be run by any ignorant boy or woman. So well built that their durability is yet to be determined, engines which were sold 30 years ago being still in active service.
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239 Franklin Street, BOSTON.
692 Craig St., MONTREAL, P. Q.
22 Pitt St., SYDNEY, N. S. W.
Teniente-Rey 71, HAVANA, CUBA.

The Shimer Cutter Head



FIG. 202

YOU RECOGNIZE the value of improvements when you select machinery—why not exercise the same care and judgment in the selection of your smaller tools—**CUTTER HEADS**—the work of which is at once the recommendation—a sort of introductory card—for your mill. The few dollars necessary to equip with **The Shimer Cutter Head**—which saves you all the hand fitting and places behind your machine continuously patterns of superior finish—will soon show for itself on the credit side of the cash account.

The proof is easy when we offer to make **The Shimer Cutter Head** to your measurements and send it on trial 30 days, to be paid for or returned.

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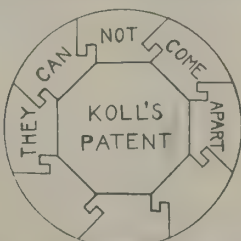
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We are prepared to make prompt shipment from our Chicago factory in carload lots or less of our No. 200 and No. 220 stock columns 8 and 10 inches in diameter.

It will pay you to write us for prices before placing your orders.

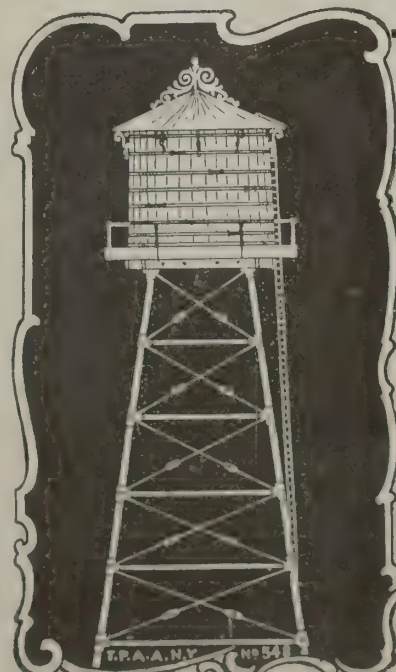
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Koll's Patent Lock Joint Columns
For Pergolas, Porches, or Interior Use.



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about the country your attention is always attracted by the tanks and towers that supply water to country homes and rural villages. The handsome ones are made by the

W. E. CALDWELL CO.,
LOUISVILLE, KY.

Double Head TACKLETS



Old King Cole was a merry old soul—
Even at house-cleaning time—
He said, "'Tis the knack
Of the 'Double Head Tacklet.'
And you get a big box for a dime."

It is almost impossible to take a carpet up when the OLD-fashioned carpet tack is used without tearing the carpet. Many headless points which cannot be extracted without great difficulty are sure to remain in the floor. The "Double Head Tacklet" never breaks nor bends; it

cannot lose its head; any child can draw or drive it. They can be used over and over again. Hence they are cheaper than common tacks.

\$100 IN CASH
For best 34 Tacklets (or verses)

similar to the one above, advertising our tacks. For the best three "Tacklets" \$50 each; for the six next best \$5 each; for the fifteen next best \$2 each; for the ten next best \$1 each. Contest closes May 1st. Mail your "Tacklets" to the name and address as printed on the tack boxes.

The Double Head carpet tack in 5c. and 10c. packages may be found in all stores where carpet tacks are sold, or mailed on receipt of price.

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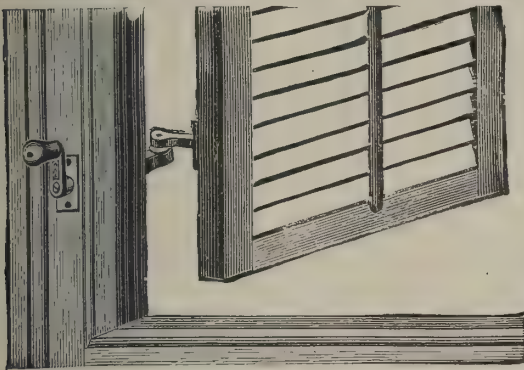
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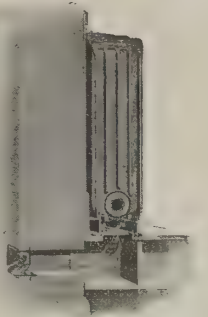
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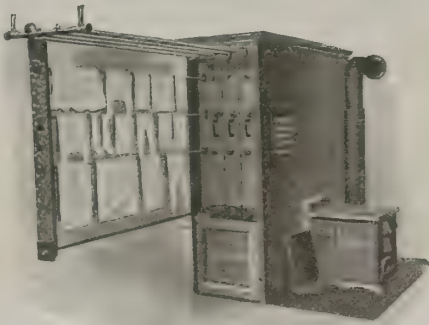
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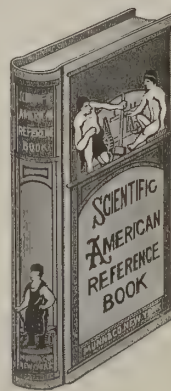
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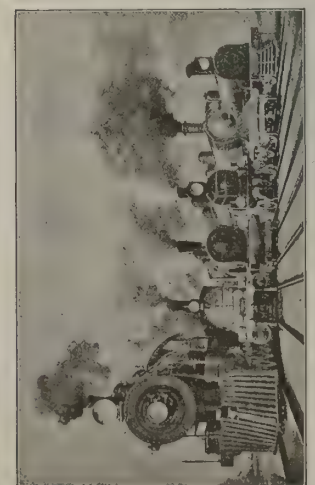
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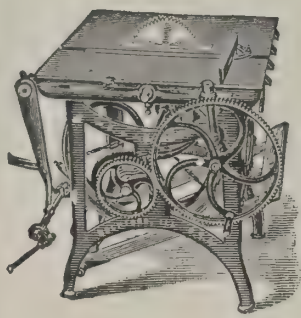
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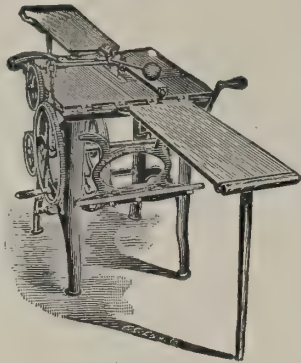
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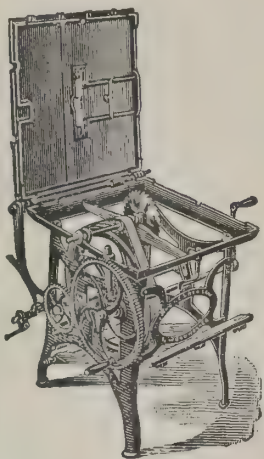
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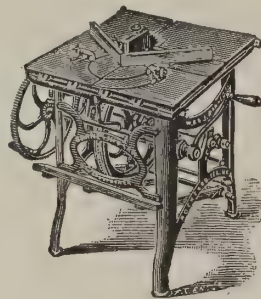
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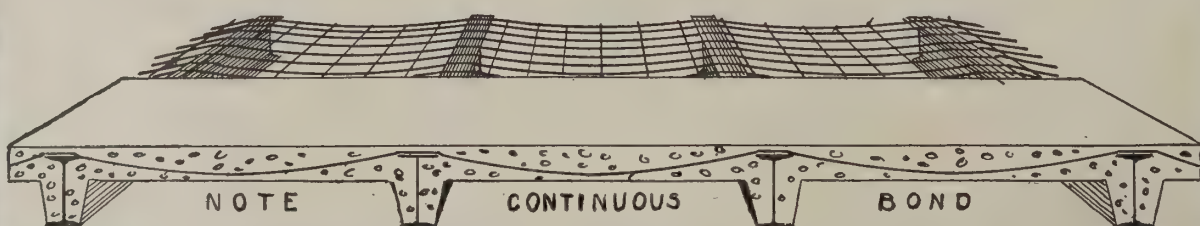
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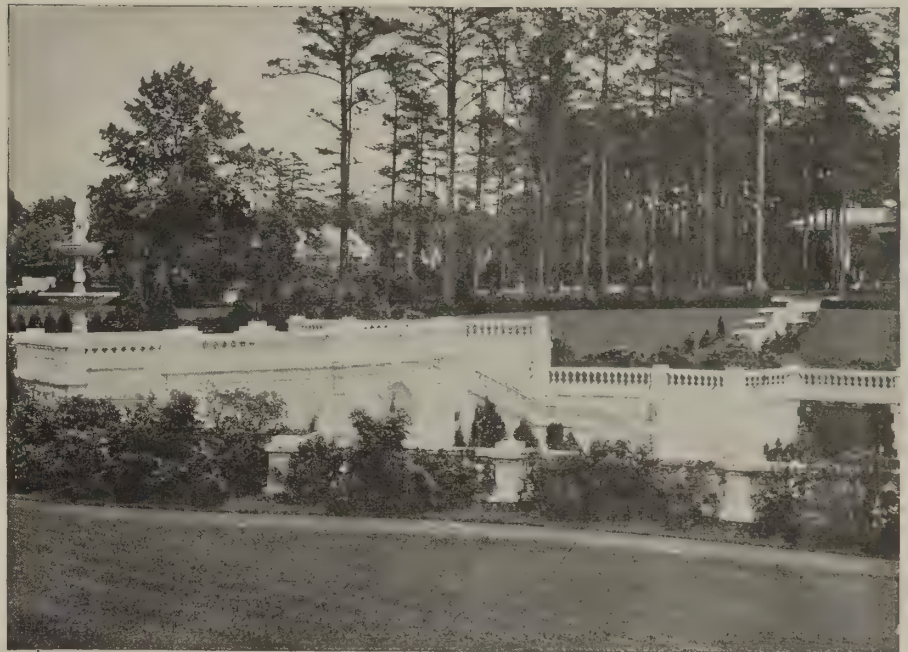
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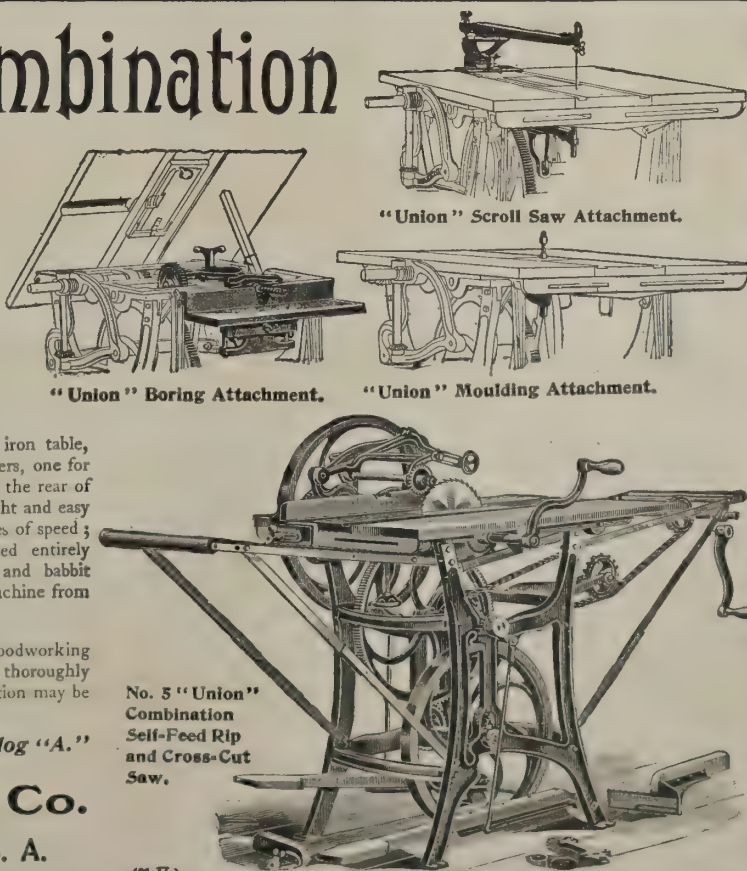
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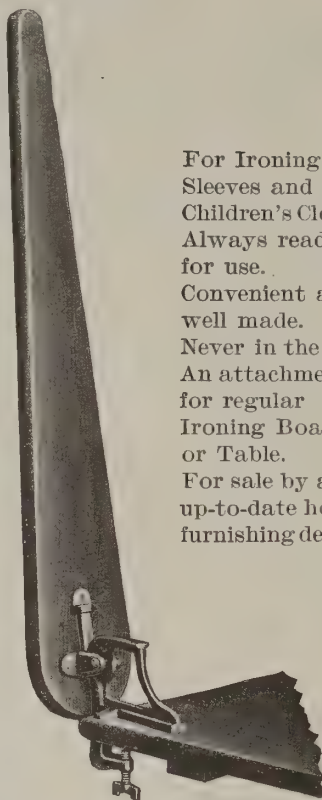
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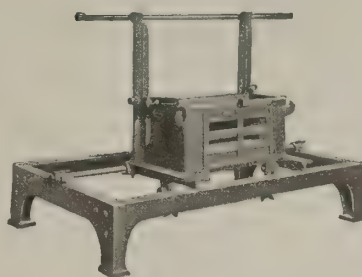
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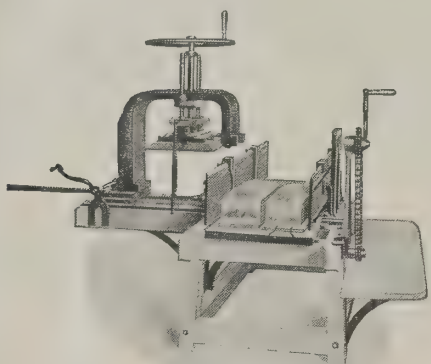
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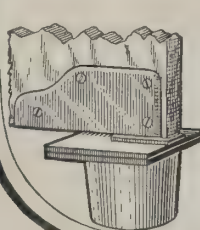
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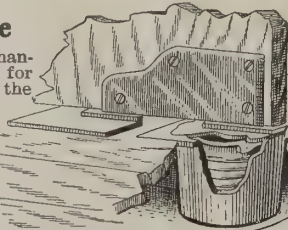
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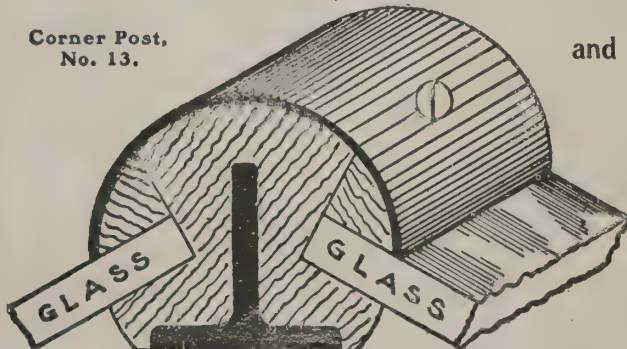
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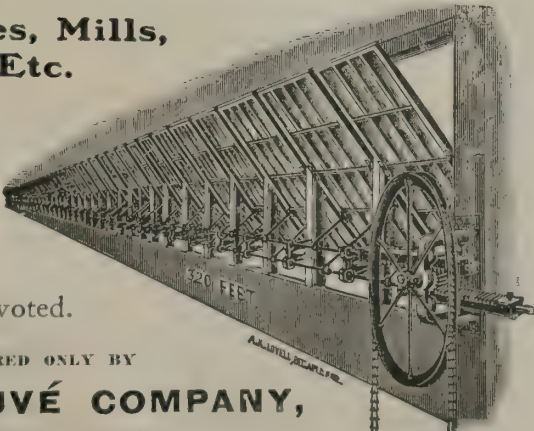
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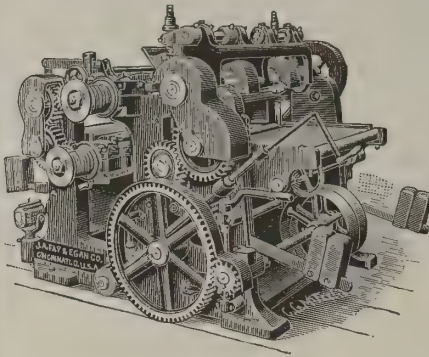
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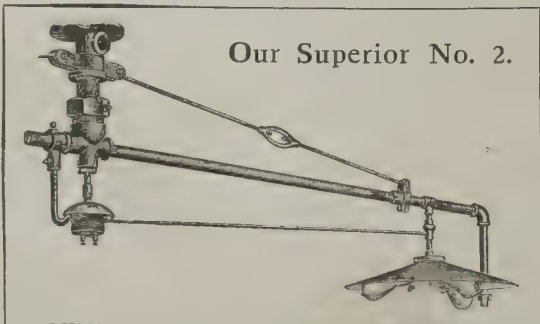
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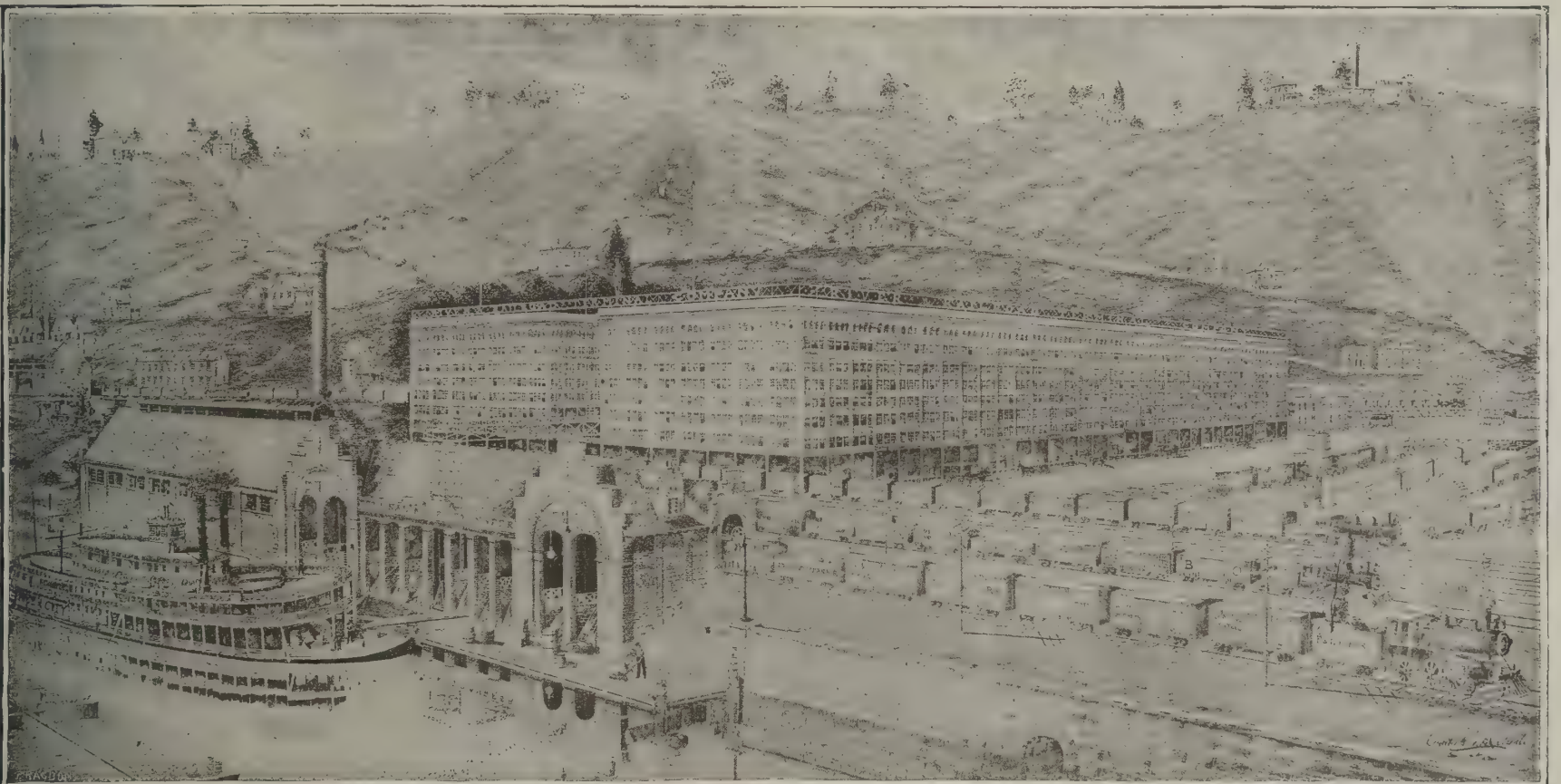
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Building Monthly.



Scientific American Building Monthly for 1905

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THE SCIENTIFIC AMERICAN BUILDING MONTHLY will maintain, for 1905, the high standard it has set in the past as the leading magazine of domestic architecture. Its distinct aim is to help its readers to better building, and it seeks, for that purpose, to interest the architect, the house owner, the real estate promoter, the home-maker, and the builder. It considers the house in the double aspect of a work of architecture and a home. It covers a field peculiarly its own, and it covers it in a very complete manner.

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Interior Decoration and Furnishing are fully treated, both in articles and notes and in interior views of houses. The monthly illustrations include many interesting interiors, most of which are published only in the BUILDING MONTHLY.

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SCIENTIFIC AMERICAN

Building Monthly.

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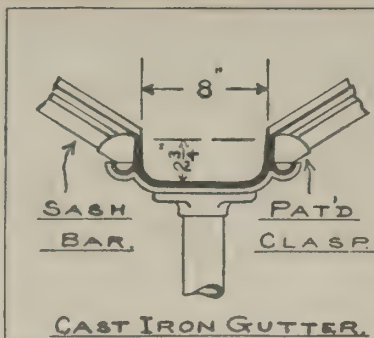
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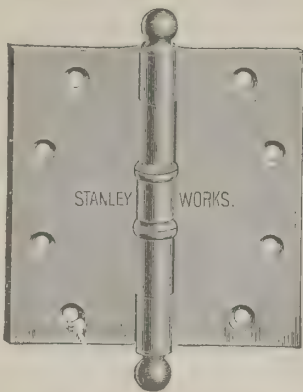
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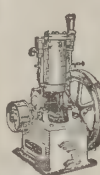
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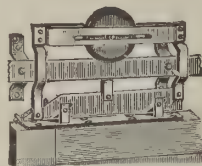
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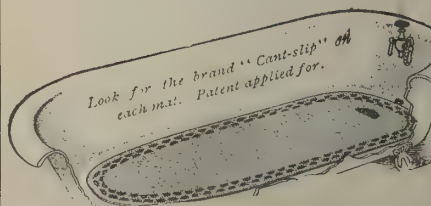
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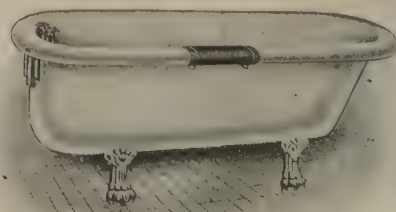


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SCIENTIFIC AMERICAN

Building Monthly.

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NEW YORK, APRIL, 1905.

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THE ENTRANCE FRONT.

THE HOUSE OF LLOYD BRYCE, ESQ., ROSLYN, LONG ISLAND, N. Y.—See page 69.

MR. OGDEN CODMAN, ARCHITECT.

SCIENTIFIC AMERICAN
BUILDING MONTHLY

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*** The engravings presented in this issue are made from photographs taken specially for the SCIENTIFIC AMERICAN BUILDING MONTHLY.

MONTHLY COMMENT.

A DECIDED novelty in exhibitions, and an architectural exhibition at that, is promised in London this summer. It is to be an exhibition of cheap cottages, and arrangements have been perfected with the Garden City Company, an organization for the building of good cheap houses, to hold the exhibition on their land at Letchworth. The company will allot the necessary land for the purpose, and will be prepared to offer reasonable terms to the builders of the cottages for the leasing of the land on which the cottages will be erected. The company will be prepared to guarantee tenants for cottages (the plans of which have been previously approved) at rents showing a return of not less than 5 per cent. on the certified cost of erection, this cost of erection to be fixed at the opening of the exhibition. The company may itself agree to purchase the cottages, and will have the first option of doing so at the cost of erection plus 10 per cent. for profit. It will also arrange for a public sale of the cottages at the close of the exhibition, if desired. Builders of cottages may of course dispose of or rent their cottages themselves, if they prefer to do so. Subscriptions are invited for the raising of funds for prizes and organization. It is hoped to make the exhibition of a national character, and examples of cottages suitable to the various localities in Great Britain will be invited. An attempt will be made to demonstrate what are the cheapest available materials in different districts. It is also hoped that exhibits will be obtained from the different Colonial Departments; also from France, Germany, and other countries interested in housing. Subsidiary to the main exhibits of cheap cottages, it is proposed to have exhibits of photographs of cottages from all parts of the world; Garden City views; drawings and paintings of cottages from all parts of the country; photographs and drawings of examples of town development throughout the world; fittings and furniture suitable for small cottages; exhibits from guilds of handicraft throughout the country; designs for cottage gardens, garden implements, etc.; models and designs of build-

ings for small holdings; and, lastly, plans and reports of social, economic, co-operative, educational, and other societies.

THE interesting announcement is made by the University of Pennsylvania of the establishment of a course in public health. The subjects announced include courses in sanitary engineering, sanitary legislation, inspection of meat, milk, and other animal products, the sanitary engineering of buildings, social and vital statistics in the United States, practical methods used in sanitary work, general hygiene, and personal hygiene. The details include a very complete review of the entire field of public health. The announcement is significant of the genuine interest that is being taken in such matters, and marks a distinct advance in sanitary science. It is proposed to open this new course in October next. The time has long been ripe for such a movement, and its development in practical teaching will be watched with interest.

THE joys of automobiling are now so well known and so keenly recognized that a word on the intensity of the art is hardly needed. And yet the automobilist who drives for speed alone, taking his own life in his hands, and subjecting others to serious danger, represents but the slightest side of automobiling. Exhilarating as the speed-sport is, the greatest joy is not in going the farthest and traveling the fastest, but in seeing the most. And there is so much to see in a day's run! Mr. Rudyard Kipling has well voiced this fact in a letter on the subject published some time ago, an eloquent passage in which is well worth quoting:

"On a morning," he says, "I have seen the Assizes, javelinmen and all, come into a cathedral town; by noon I was skirting a new-built convent for expelled French nuns; before sundown I was watching the Channel Fleet off Selsea Bill, and after dark I nearly broke a fox's back on a Roman road. You who were born and bred in the land naturally take such trifles for granted, but to me it is still miraculous that if I want petrol in a hurry I must either pass the place where Sir John Lade lived or the garden where Jack Cade was killed. In Africa one has only to put the miles under and go on; but in England the dead, twelve coffin deep, clutch hold of my wheels at every turn, till I sometimes wonder that the very road does not bleed. That is the real joy of motoring—the exploration of this amazing England."

The mere space-coverer can never realize the fulness of the joy that then comes to the discoverer. And the discoverer must not only cover space, but he must see, and intelligently see, the objects that he comes upon and which he passes. Mr. Kipling, of course, brings an extraordinary intelligence to bear upon his adventures, but he clearly shows how to get the most out of the automobile.

HELPS TO HOME BUILDING.

THE FOURTH OF A SERIES OF TWELVE PAPERS.

THE STRUCTURE.

THE material of the house bears an essential relationship to its esthetic effect. Modern methods have so perfected heating appliances that the value of the house as a shelter is no longer determined by the material of which it is built. The substance, the structure, therefore, is chiefly to be determined by its artistic signification.

There is, however, another element which has a direct bearing on the question of material and the way in which the house is built, an element that, all things considered, is the most important of all, and this is the question of cost. At every stage in the home-making process the question of cost presents itself, and there is as much need of considering it in large houses as well as in those more modest buildings, every stone and board of which suggests the thought that its price had been considered before it was put in place.

Important as the cost question is in houses of every grade, it may be regarded as a vitally essential point that no house should look cheap. This quality is, of course, quite unavoidable in houses admittedly of low price, houses for mechanics, houses for working people, houses built to sell or rent at low figures. The cost of erecting any house of any grade is now so considerable that low-priced houses must smack of cheapness in every part. Such buildings stand in a class by themselves, hopelessly alone, almost unremediable.

Poverty of material, however, is never bettered by adventitious ornament. Such decorations are the stock in trade of every builder, and quite elaborate moldings and alleged "decorations" are brought forth from time to time and offered at such absurdly low prices that many persons, unacquainted with the correct principles of domestic architecture, fail to understand why it might not be a good thing to purchase so much "beauty," when it can be had at such bargain rates. Bargains in ornaments are very good things to leave

alone. They are quite unnecessary, and, notwithstanding the fact that they can be had in almost every style and every material, they seldom bear a logical relationship to the real structure.

And this is the secret of all good building, of all sound construction, of all good ornament: that it be logical. A place for everything and everything in its place, is as true of good building as it is true of good housekeeping. Every part of the structure of the house must bear a logical relationship to every other part. Ornament only ornaments when it has a direct relationship to the design, and the best ornament is that which has a structural purpose as well as an ornamental character.

A house is a permanent structure; it is built to last, and its value as an investment is often dependable upon its durability. Repairs are expensive and annoying. The house should, therefore, be well built, soundly constructed, of good materials. An increased first cost for good materials and good construction means later economy in repairs. The point is, of course, an obvious one; but the tendency of the day is so much toward price reduction for everything and in everything, that a word or two of caution will not be amiss.

The structure of the house has a definite relationship to the design. One can not be considered apart from the other. A design that presents a pleasing appearance in one material will have an entirely different character in another and may be quite intolerable. The substance of houses can not be translated, and if one desires a particular kind of a house one must be content with the material in which that style has its best and most characteristic illustration.

Before such a choice will be made, however, the question of cost—that ever-present question—will have determined what materials shall be used. There is hardly a limit to the choice; stone, brick, brick and stone, brick and cement, cement, wood, half-timber, shingles, boards, a combination of two or more. The merits and demerits and relative cost of each of these will, no doubt, be minutely discussed by the careful home-builder. But the discussion will be elemental if the varying differences of each grade of material are not, in their turn, as fully debated. Stone, for example, is a general and specific name; should it be under consideration it cannot be cast to one side without a full consideration of the various kinds of stone, the proximity of the sources of supply, the values of surface and texture; even the size of the stones will have their effect on the final appearance of the house. It is the same with brick, many kinds and sorts of which are now in the market, and other materials must likewise be considered in their relationship to effect and finish. Much of these matters will be best understood by the architect, who not only has technical knowledge of the various qualities of materials, and who is best able to understand the finality of appearance; but it will be useful for the home-builder to familiarize himself with all these details, for such studies, even if without his special lines of thought, will be most helpful in satisfying, in the end, with the house he has built.

The design of the house and its building are problems which must be left to professional men who are alone competent to undertake these tasks. The most enthusiastic home-builder can not venture into these matters with any benefit to himself or to his house. The chief points for the owner to bear in mind in this stage of the proceedings are that sound construction is the first essential of all good building; that money spent in obtaining good construction is money well spent; that mere ornament, without relationship to structural signification, is absurd and useless; and that features and parts of buildings which are very admirable in one material will present a wholly different character in another and be quite intolerable.

The material in which a building is built has, perhaps, the most positive bearings on its esthetic value. The importance of materials in the historical styles—in the great buildings of the world—can hardly be overvalued. What is true of a great church or a vast palace is equally true of the more modest structures in which the average American is content to live. A porch of stone is designed for stone, and not for something else. A bay window in wood can never be anything else than a wood window. A stone chimney necessarily has a different character from a brick chimney. If any special feature of this description is desired, the material for which it was designed must be used, and nothing else.

It is easy to realize the importance of material in design by comparing two houses of similar size and style built of different materials. If the walls are of brick, they will have a very different character, a very different aspect, from those of wood. A wall of large old style wooden shingles will have a very different effect from a wall of matched boards, or a wall of modern shingles, stained and cut in the latest styles. And what is true of the wall is true of every part. Copying and transposition, borrowing and redesigning, are now so common that it is quite important this basic fact should be thoroughly comprehended.

NOTABLE AMERICAN HOUSES*

BY BARR FERREE.

THE HOUSE OF LLOYD BRYCE, AT ROSLYN,
LONG ISLAND, N. Y.

Of the many compensations for living on Long Island, and they are not few, one of the chief is Roslyn. The moment one leaves the station one turns into a country road, along which the village ambles in a thoroughly desultory fashion. Beyond the village are woods; then a lake, with a dismantled paper mill of Revolutionary date; then the headwaters of Hempstead Harbor, glistening through the thick foliage; then more woods—the beautiful, lovely woods of Roslyn, the trees so thickly leaved that it seems impossible that the sun rays should reach the earth at their roots—woods so densely green that it seems the essence of all greenness must be concentrated on these gentle forests.

Leaving the main highway, the carriage turns into a private road that rises along the edge of a hill fronting Hempstead Harbor. It rises sharply, with little precipices on one side, and the cut-out bank on the other, all richly wooded, and very soft and quiet. But presently the trees grow less and less, and then come to an end, and the ground is now covered with grass, beautiful, thick, rich grass, growing almost to the forest's edge up over the crown of the hill, on which the house is built.

It is a beautiful sight. The very spot, in truth, on which to build a house; the rich green lawns slope away from it on every side; the forests form a curtain all around; and far below are the gleaming waters of Hempstead Harbor, that strange incoming of Long Island Sound that tries so hard to cleave the land in two until its gentle washes are met by the solid Roslyn shore, perhaps seven miles within.

The house is finely placed, and so situated that the water in the distance below may be seen from both the entrance and the garden fronts, a circumstance so striking that some knowledge of the neighborhood is necessary to its understanding. It is so simple and gracious in its design, so spacious and well proportioned, that its size is not, at first, apparent. It was designed by Mr. Ogden Codman, the architect, originally of Boston and now of New York, and is a fine type of the large American country house of the first rank.

The general scheme is best understood from the garden front, which, although without formal entrance, is regarded as the main front. It is planned in the Southern style, with a large central building—the house proper—and two single story wings connected with the main structure by short galleries. These outer wings or pavilions are attached to the garden front, and do not, therefore, form a portion of the entrance front.

The latter is the part first seen as the carriage deposits the visitor at the main doorway, a stately frontispiece—round arched, prefaced with Ionic columns supporting a curved pediment, with balustrade above, the whole supported by generous quoins and rusticated center wall. This structure, which is projected sufficiently from the main wall to give needed emphasis to so important a feature as the entrance of state, and to provide room for the balcony above, is quite properly the most elaborated portion of the whole exterior.

The house charms and satisfies by the directness of its design, the simplicity of its detail, the dignity of its proportions. The brick walls are without ornamental treatment, save for the broad quoins that are needed on the angles of so large a building, to give strength and

emphasis to the bounding edges. At first glance there is little else save the stately treatment of the window hoods and the recessed panels of plain brick between the windows of the first and second stories. Yet as a matter of fact there is very much more that helps in producing the fine effect of this graceful exterior. The ends of the building are projected as wings, each containing two windows. The recessed center has a window on each side of the doorway, with three above set closer together. A broad, plain white cornice binds the whole together, while the roof, which forms the third story, slopes unobtrusively away, with plainly designed dormer windows. The proportions of every part are very fine; the wall spaces are ample, yet not too great; the windows are large, but set within good wall areas; the white of the corners, the entrance, the hoods and sills of the windows, and the cornice which crowns the whole, is very happily in contrast with the red brick of which the house is built.

The garden front carries out the same motifs. The corner wings are here but slightly projected—just sufficient to mark their individuality. The windows, which in the entrance front were entirely flat-topped, here give way in the first story to round arched openings with frames that rise directly from the level of the

yellow velvet brocade hangs before the single window; behind a yellow screen is a yellow couch; all of a delicious shade that glows wonderfully when the bright afternoon sun streams into the windows. On the walls are old painted mirrors, Chinese and Genoese. There is a fine old inlaid cabinet here, and chairs of kindred sort. On each side of the entrance doorway is fastened an old Italian pilaster in blue and gold.

A doorway with a monumental frame—like all the main doorways on this floor—leads to the drawing-room. A delicate room it is, white as day, I was about to say; but the walls of paneled wood are tinted a delicate pearl gray with dead white trimmings; the rich red damask curtains at the windows, and the furniture, covered with the same material, in gold and white frames, give the needed note of color. There are many fine pieces of furniture here, and many pieces of old Chinese red lacquer that are quite unique. Just within the door is an exquisite screen of red lacquer; beyond the mantel is a cabinet of the same material; in one corner is a table with its top upturned that the splendid gilding on the deep red ground may be the better seen; before a window is a curious vase; before the front windows two small flower holders; and all of the deepest red, and rare and exquisite workmanship.

The mantel is of Italian marble, elaborately carved, with supporting columns, and on each side is a large vase of rare Chinese porcelain. A splendid crystal chandelier hangs from the ceiling, and on the walls are crystal candle lights in gold and in brass. There are mirrors let into the walls, and an odd-shaped antique mirror with carved gold frame of quaint design. Two large marble vases stand before the windows which overlook the Sound and the Westchester shore beyond.

The anteroom on the other side of the house contains the stairs to the upper floor and serves as an entrance to the library. This is a lovely room, not quite so large as the drawing-room. It is wainscoted with walnut, which gives a fine contrast to the blue curtains which, in their turn, give the color note to the room. The walls are partly filled with bookcases built into the panels, forming permanent fixtures. The mantel is of black and white marble, and above it hangs a fine picture by Van Loo. Other paintings are hung against the paneled wood where space can be found for them. There is much old furniture in the room, but modern comfort has been considered in some recent newer pieces.

From the library one may step out on to a terrace, with a cemented floor, shaded by an awning. Just beyond is a little flower garden, giving a pleasant note of color. The plants are chiefly blue in flower. It is a delicious little open court, bounded by the main wall of the house and by the wall of the kitchen pavilion, whose shuttered windows are rigidly closed to inquisitive eyes.

The dining-room, like the other rooms, is large, being forty-five feet by twenty-five feet. Its walls are green and old gold, very subdued in hue. The mantel is of black and white marble, surmounted with a mirror in a delicately chased

frame. The clock and candelabra are of the Empire period. There are many family portraits here, including one of Peter Cooper, and some good old tapestries.

The dining-room opens on to the principal terrace, which is flanked on either side by the pavilions. A fountain plays gracefully in the center. Beyond is a little lake, shaded with giant trees, and farther on is a charming sweep of park-like landscape. Far off, on the north, are the waters of Hempstead Harbor, which lie below, and in the dim horizon, across the silent Sound, is the Westchester coast. It is a scene of great beauty and peace, of nature at her best, a vision of undulating lawn, of fine forests, of distant water.

The estate includes a swimming-pool and two tennis courts, one cemented and one laid with grass. Not far from the latter is an old-fashioned flower garden, enclosed within high hedges. The property is a large one, comprising about two hundred acres. A part of it was once owned by William Cullen Bryant, the poet.

NOTE.—The illustrations of Mr. Lloyd Bryce's house have been taken from "American Estates and Gardens," Munn & Co., publishers.

ARCHITECTS of all nations have been invited to present plans for the Carnegie Peace Palace at The Hague. This in addition to a number of specially invited architects.



THE MAIN DOORWAY—HOUSE OF LLOYD BRYCE,
ROSLYN, LONG ISLAND, N. Y.

floor. A balcony at the second story emphasizes the three central windows.

All the windows, save on the front, open flush with the terraces and add largely to the sense of repose.

The outer pavilions, which form so interesting a feature of this front, are designed alike, with round-topped openings and low sloping pyramidal roofs. They are connected with the main structure by short arcaded galleries with round arches. That to the left, as viewed from the inner lawn, is the kitchen; that to the right is an open porch or out-door room, reached directly from the drawing-room, a pleasant, open-air retreat, affording superb outlooks upon the land and water beyond.

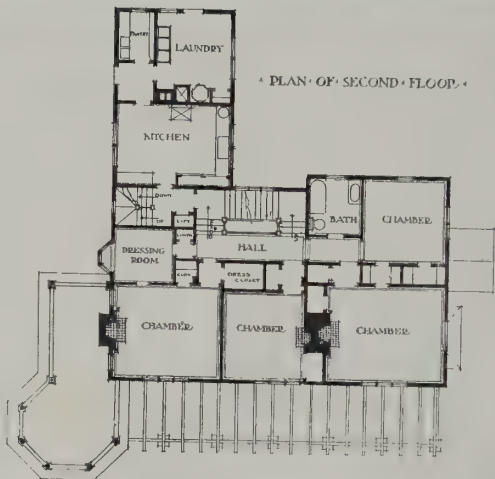
The plan of the house is most interesting. The main doorway leads directly into the vestibule, which is circular in form, the ceiling supported by yellow columns. The floor is paved with white marble, on which an Eastern rug is laid. Four fine Roman busts on pedestals form the chief ornament of this vestibule, which, on two sides, is bounded by rectangular passages or antechambers. Beyond these, to the right, is the library; to the left is the drawing-room; the dining-room is at the back, between the two other chief rooms. It is, therefore, a plan that combines entire axial communication with great convenience and complete economy of space.

The anteroom to the drawing-room is furnished in yellow. The walls are yellow-tinted; a rich curtain of

* Previous articles in this series: "BILTMORE," THE ESTATE OF GEORGE W. VANDERBILT, ESQ., Biltmore, N. C., February, 1903. "THE GARDEN AT 'GEORGIAN COURT,'" THE HOUSE OF GEORGE J. GOULD, ESQ., Lakewood, N. J., August, 1903. "HARBOR HILL," THE ESTATE OF CLARENCE H. MACKAY, ESQ., Roslyn, N. Y., September, 1903. "THE ORCHARD," THE COUNTRY SEAT OF JAMES LAWRENCE BREESE, ESQ., Southampton, N. Y., November, 1903. "THE RESIDENCE OF W. L. STOW, ESQ., Roslyn, N. Y., December, 1904. "WHITE HALL," THE HOUSE OF HENRY M. FLAGLER, ESQ., Palm Beach, Fla., January, 1904. "FAULKNER FARMS," THE ESTATE OF MRS. CHARLES F. SPRAGUE, Brookline, Mass., March, 1904. "THE HOUSE OF E. J. BERWIND, ESQ., Newport, R. I., April, 1904. "GREY CRAIG," THE ESTATE OF J. MITCHELL CLARK, ESQ., Newport, R. I., May, 1904. "BLAIRSDEN," THE ESTATE OF C. LEDYARD BLAIR, ESQ., Bernardsville, N. J., June, 1904. "KILDYSART," THE COUNTRY SEAT OF DANIEL O'DAY, ESQ., Deal Beach, N. J., July, 1904. "THE ESTATE OF HENRY W. POOR, ESQ., Tuxedo, N. Y., August, 1904. "THE COUNTRY SEAT OF STANFORD WHITE, ESQ., St. James, L. I., N. Y., September, 1904. "DREAMWOLD," THE ESTATE OF THOMAS W. LAWSON, ESQ., Egypt, Mass., October, 1904. "THE HOUSE OF HERMAN B. DURYEA, ESQ., Old Westbury, N. Y., November, 1904. "THE HOUSE OF MRS. RICHARD GAMBRILL, Newport, R. I., December, 1904. "MRS. A. CASS CANFIELD'S HOUSE, Roslyn, N. Y., January, 1905. "THE HOUSE OF OGDEN MILLS, ESQ., Staatsburg, N. Y., February, 1905. "BELLEFONTAINE," ESTATE OF GIRARD FOSTER, ESQ., Lenox, Mass., March, 1905.



THE TERRACE.



THE TERRACE FRONT.

A SUMMER HOME AT PRIDES CROSSING, MASS.—See page 82.

MR. CHARLES K. CUMMINGS, ARCHITECT.



THE HALL.



THE ENTRANCE FRONT.



THE DINING-ROOM.

A SUMMER HOME AT PRIDES CROSSING, MASS.—See page 82.

MR. CHARLES K. CUMMINGS, ARCHITECT.

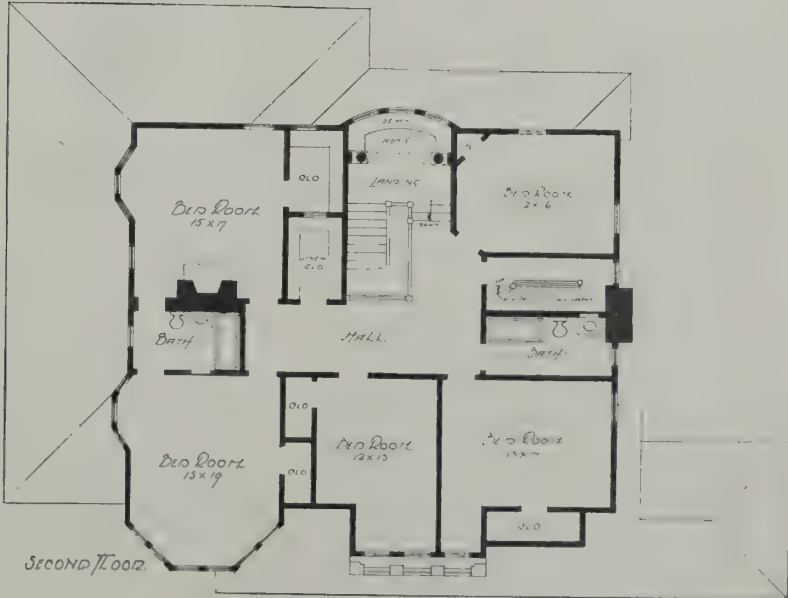
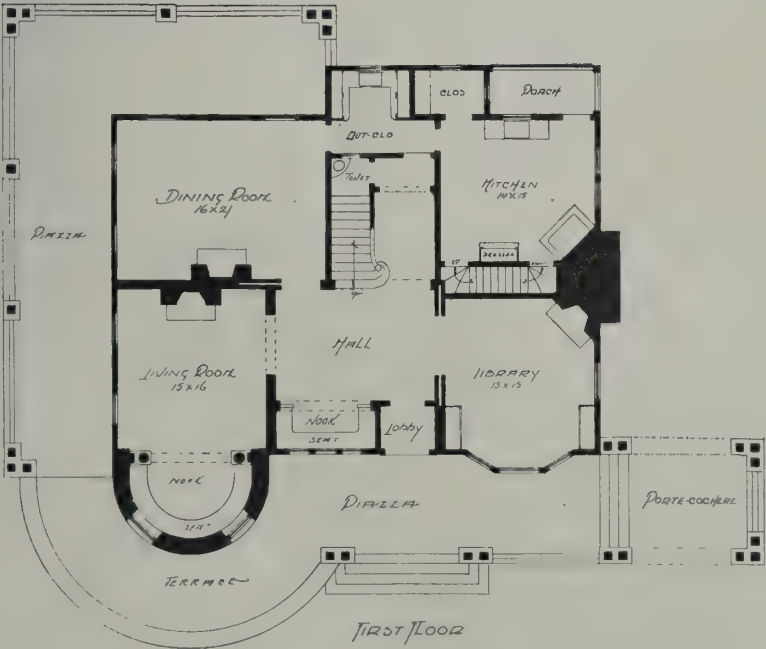


PERGOLA—"GEORGIAN COURT," ESTATE OF GEORGE J. GOULD, ESQ., LAKEWOOD, N. J.



PERGOLA—"THE ORCHARD," ESTATE OF JAMES L. BREESE, ESQ., SOUTHAMPTON, L. I.

TWO PERGOLAS.—See page 83.



RESIDENCE OF JOSEPH T. WIER, ESQ., GREENWICH, CONN.—See page 82.
MESSRS. WILLIAM NEIL SMITH AND HENRY C. PELTON, ARCHITECTS.



THE GARDEN FRONT.



THE LIBRARY.

THE HOUSE OF LLOYD BRYCE, ESQ., ROSLYN, LONG ISLAND, N. Y.—See page 69.

MR. OGDEN CODMAN, ARCHITECT.



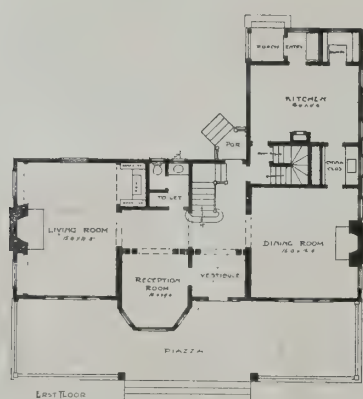
THE DRAWING-ROOM.



THE DINING-ROOM.

THE HOUSE OF LLOYD BRYCE, ESQ., ROSLYN, LONG ISLAND, N. Y.—See page 69.

MR. OGDEN CODMAN, ARCHITECT.



THE HOUSE OF CHARLES S. MILLER, ESQ., CHESTNUT HILL, MASS.—See page 83.

MR. ERNEST M. A. MACHADO, ARCHITECT.



THE DINING-ROOM.



THE LIVING-ROOM.

THE HOUSE OF CHARLES S. MILLER, ESQ., CHESTNUT HILL, MASS.—See page 83.
MR. ERNEST M. A. MACHADO, ARCHITECT.



THE STAIRCASE.

THE SUMMER HOME OF HARRY BILLINGS, ESQ., ELBERON, N. J.—See page 84.

MR. WARRINGTON G. LAWRENCE, ARCHITECT.



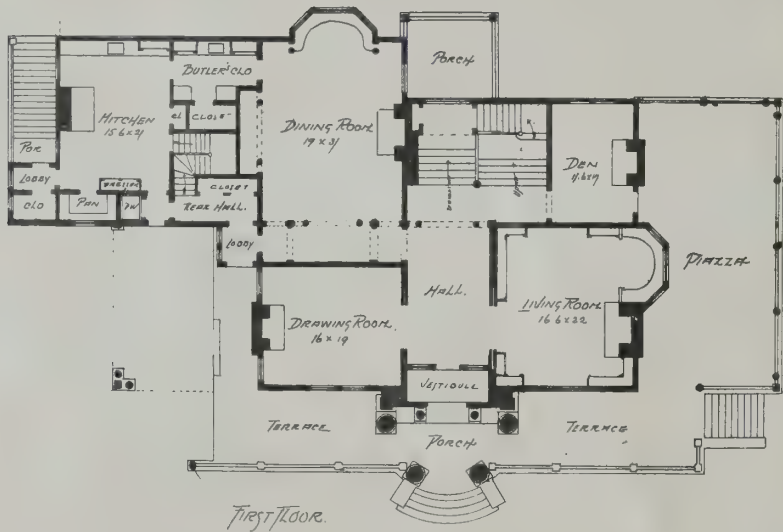
THE HALL.



THE LIBRARY.



THE DINING-ROOM.



THE GARDENER'S HOUSE.



THE STABLE AND PERGOLA

RESIDENCE OF JAMES TURNER, ESQ., MONTCLAIR, N. J.—See page 87.

MR. FRANK FREEMAN, ARCHITECT.



THE HALL AND STAIRCASE.



THE DINING-ROOM.

RESIDENCE OF JAMES TURNER, ESQ., MONTCLAIR, N. J.—See page 87.
MR. FRANK FREEMAN, ARCHITECT.

**RESIDENCE OF JOSEPH T. WIER, ESQ.,
GREENWICH, CONN.**

THE approach to the residence of Joseph T. Wier, Esq., at Greenwich, Conn., which is illustrated on page 73, is an introduction to the entire estate. The house is built of stone, shingle and half timber work. The building is placed at one side of a hill, with a rapid-sloping to the grade. The proportions of the house are suitably low, for it has the good fortune of being for the most part but two stories in height. The walls of the terrace, and also the stonework at the first story of the tower, the pedestals to the piazza and the portecochère columns, and the underpinning are built of rustic field stone. The remainder of the first and second stories is covered with shingles, which are left in their natural state. The roof is covered with shingles and stained a moss green. The gable ends are treated in the half-timber style, and the plaster work is left in its natural gray color, while the beams and all the trimmings throughout are painted a bottle green.

this wainscoting is covered with a large flowering paper with a harmonious effect, and the whole finished with a wooden cornice. The fireplace is built of brick, with the facings and a hearth of the same, and a mantel.

The living-room is trimmed with mahogany, and is treated in the Italian Renaissance style, with a green wall decoration, green tiled hearth and facings to the fireplace, and a nook separated by columns which rest on pedestals, and support an archway which is sprung over the opening. This nook has a paneled seat.

The dining-room is treated in the Colonial style, with white enamel trim and mahogany doors. It has a paneled wainscoting 6 feet in height, finished with a dented and bracketed platerack. The wall space above is covered with crimson burlap, and finished with a wooden cornice. The fireplace is built with red pressed brick facings and hearth, and a mantel to correspond with the treatment of the room. The butler's pantry is furnished with a sink, china closets with glass doors, drawers, etc. The kitchen is fitted with all the best

rough stone steps rise to the level of the house site, and a graveled walk leads up to the front porch, passing along by a very attractive garden, with a settle covered with a latticed hood. The beds and rockery are planted with old-fashioned flowers, mostly perennials, which form a brilliant coloring from early spring till late in the autumn. The house has a stone underpinning, and the exterior above the underpinning is covered with cedar shingles, left to finish natural, while the trimmings are painted white. The roof is also shingled and is stained a brilliant red.

The pergola, which is to be covered with vines, will form a proper shade for the summer, while the remainder of the year it is exposed, permitting the sunshine to enter all of the rooms in the first story. After passing along the terrace, which is under the pergola, and is provided with settles, etc., the living plaza is reached.

The entrance doorway leads to a side hall, to the right of which are the coat and hat room, lavatory, etc.,



THE GARDEN—A SUMMER HOME AT PRIDES CROSSING, MASS.

The hall is in the center, and forms a square room, while the staircase is recessed into a stair-hall, the whole of which is treated in the English style. This hall is trimmed with oak, treated in a dark Flemish brown. It has a paneled wainscoting to the height of 5 ft. 6 in., which is finished with a plate rack. Above this plate-rack the walls are covered with an Indian red burlap, and the whole finished with a wooden cornice. The nook is separated by an archway, and is provided with a paneled seat, over which there is placed a cluster of casement windows. The staircase hall is separated from the central hall by a similar archway, and the stairs have a balustrade of sawn work. This staircase rises up to a broad landing, from which there is thrown out a semicircular bay window provided with a seat, and the whole is separated from the staircase landing by an arcaded effect, composed of columns resting on pedestals, etc.

The library, to the right of the entrance, is trimmed with oak, finished in a golden brown. It has bookcases built in to the height of four feet, and the remaining wall space is covered with a paneled wainscoting to the same height as the bookcases. The wall space above

modern conveniences, including a large store pantry, range, sink, dresser, rear stairway, etc.

The second story is trimmed with white wood, treated with white paint. This floor contains a large open hall, five bedrooms, two bathrooms, and a large linen closet. The bathrooms have tiled wainscotings and floors, and each has porcelain fixtures and exposed nickelplated plumbing.

The third floor contains three servant bedrooms and bath, and a trunk room. The cellar contains a laundry, heating apparatus, cold storage, fuel room, etc.

Mr. William Neil Smith and Henry C. Pelton, architects, New York.

A SUMMER HOME AT PRIDES CROSSING, MASS.

AN interesting but unpretentious house is illustrated on pages 70, 71, and above. Its form is simple and square, and the entrance porch with Doric columns, which is separated from the living-porch, and the pergola which extends across the front of the house, are matters of interest.

The site rises seven feet above the roadway, and is retained by a massive stone wall. A short flight of

and to the left the parlor, which is treated in Empire green and white, with low paneled wainscoting. It has an open fireplace with tiled facings and hearth, and a paneled mantel, and on either side there are archways provided with bookcases, which are built in.

The side hall has a paneled wainscoting and a beamed ceiling. This hall, which has a domed ceiling, leads into the staircase hall, both of which are trimmed with cypress and finished in Flemish brown. The walls are paneled to the height of the door-casings, with plain panels at the bottom, and carved panels at the top; the wall space above is filled in with a painting. The doors leading off the hall are carved in panels. The ceiling is beamed and ribbed. The staircase, of ornamental character, is separated from the hall proper by an archway supported on square columns.

The dining-room is separated from the staircase hall by an archway only, so that if desired it can be thrown into one apartment. It has paneled walls to the height of the door and window casings, which are finished with a plate rack, above which the walls are covered with canvas and treated with a marine view in oil. The ceiling is beamed. The open fireplace has facings and

a hearth of red Welsh tile, and a mantel, with a paneled overmantel. On either side of the fireplace there are cabinets built in, with cupboards below the counter-shelf, with carved paneled doors, and cabinets above the counter, with shelves enclosed with leaded glass doors. Both the hall and this room are designed in a Flemish style.

The breakfast room is treated in a similar manner, and has a paneled seat in front of the group of small windows, and an open fireplace with tiled facings and hearth, and a mantel. The butler's pantry is fitted up with drawers, cupboards, sink, etc. The kitchen and its dependencies are located in the second story, and are fitted up complete with all the best modern conveniences. A dumbwaiter connects with the butler's pantry on the first story.

There is also a large laundry and pantry on this second floor, connected to kitchen, and both are placed over the wood shed and workshop. There are four bedrooms on this floor, plenty of large closets, a dressing-room, and a bathroom, the latter wainscoted and furnished with porcelain fixtures and exposed nickelplated plumbing. The three principal bedrooms have open fireplaces with tiled facings and hearth. The third floor contains the servant quarters and bath, and ample storage space. The cellar, cemented, contains the heating apparatus, fuel rooms, etc.

Mr. Charles K. Cummings, architect, 45 Kilby Street, Boston, Mass.

TWO PERGOLAS.

THE pergola has become so popular a feature of the large garden that no one is now designed in which it does not have a prominent part. The building of a pergola is justified on two grounds, and on two only. There must be reason in its use, and it must be good in itself. By reason for its use is meant that it must be articulated with the garden design and fill a natural and justifiable place in the garden scheme. One must not only wish to have a pergola, but have a place in which to build it, and where it will help the whole effect of the garden. This, in very simple form, is the philosophy of the pergola.

The second element is quite as essential and quite as elementary. The pergola must be good in itself. It must be designed in keeping with the other structural feature of the garden and be in harmony with the house. It need not be elaborate nor unduly costly, but must be well designed and harmoniously placed.

The pergolas illustrated on page 72 are fine examples of their kind. One photograph shows a view of the great pergola built by James Lawrence Breese, Esq., for his place, "The Orchard," at Southampton, Long Island. This is a pergola of vast extent, enclosing the garden on two sides, and stretching away from the house for hundreds of feet.

The pergola at Georgian Court, the estate of George J. Gould, Esq., at Lakewood N. J., is one of several which have been placed in those fine grounds. It is a complete and isolated structure, closing a fine vista of walk and garden.

THE HOUSE OF CHARLES S. MILLER, ESQ., CHESTNUT HILL, MASS.

On pages 76 and 77 will be found an illustration of the house erected for Charles S. Miller, Esq., at Chestnut Hill, Brookline, Mass. It is designed in the bungalow type, and yet preserves on the interior the com-

forts of the modern house. It has an underpinning of common red brick, with the quoins of stone. The superstructure, of frame, is covered on the exterior with rebated boards of cypress, and the whole stained a soft green color. The sash is painted white and the blinds a bottle green. The roof is covered with shingles and is stained a dull green.

The interior is finished in a simple but artistic manner. The hall is trimmed with white pine, and has a white enamel treatment for the trim. An elliptic archway, supported on Colonial columns, forms an artistic separation of the vestibule, which is nearly square in form, from the staircase hall. On a line with this archway there is a similar arch with columns, which separates the reception room from the hall. The hall contains an ornamental staircase, with North Carolina pine treads, white enamel balusters, and a mahogany rail. The landing of the stairway is lighted by a

with white enamel paint. This floor contains four bedrooms and two bathrooms, besides two servant bedrooms and bathroom, which are placed in the extension over the kitchen and which have a private stairway. Two of the principal bedrooms have open fireplaces with tiled facings and mantels. The bathrooms are furnished with porcelain fixtures and exposed nickelplated plumbing. The attic contains two rooms and ample storage.

A cemented cellar contains the heating apparatus, fuel rooms, laundry, and cold storage space.

Mr. Ernest M. A. Machado, architect, 9 Cornhill, Boston, Mass.

HOW TO MAKE STENCILS.

THE designs, says an exchange, are drawn full size on cartridge paper and mounted. When dry, this drawing is oiled, and when sufficiently hardened the pattern

is cut out, either with an ordinary penknife, or, if preferred, with a stencil cutter. The whole has to be varnished—this toughens the stencil plate and renders it easier to clean. When washable dyes are employed the stencil plate has to be highly varnished twice, or even more. In the ordinary way oil color is used for the stenciling, with short stencil brushes, and the colors are blended with any degree of gradation in modulation, according to the scheme in hand or the taste of the artist. Where necessary, as in double stenciling, and for backgrounds, two plates are needed. The method of the design depends upon whether the ties shall constitute the pattern or whether the pattern itself shall form the cut-out parts. Some of these stencil plates are very large, and others are exceedingly delicate and intricate. The position and purpose of the piece obviously must determine how this shall be.

BERRIED SHRUBS.

THE berried shrubs constitute a highly interesting class of plants, very decorative and beautiful in their effect, and yet by no means so numerous cultivated as they might be. The list includes a very considerable variety, but among the more common sorts are the White Flowering Dogwood, the Snowberry, the Winterberry, Japanese Roses, Thunberg's Japanese Barberry, Bush Dogwoods, the Golden Osier, the Cornelian Cherry, the Strawberry Bush, the Bitter Sweet, Bush Honeysuckles, the Matrimony Vine, Sumacs, and the native Viburnums. These shrubs, of course, all produce beautiful spring flowers, and complete their growth in the season with showy berries.

A MANTEL AND BALCONY.

AN interesting and somewhat unusual combination of mantel and balcony is shown in the illustration on this page, which is taken from the house of John P. Benson, Esq., at Flushing, Long Island, N. Y.

WHEN kitchen tables are used a great deal they are apt to become discolored, and should this be the case they should be scrubbed and dried and then rubbed with a few slices of raw lemon. They will look new.

THE elasticity of cane seated chairs may be restored by turning up the seat and washing the canework well with hot water and a sponge, so that it becomes thoroughly soaked. If it is very dirty a little soap may be used with benefit. The chairs should be dried in the air.



A MANTEL AND BALCONY—HOUSE OF JOHN P. BENSON, ESQ., FLUSHING, LONG ISLAND, N. Y.

cluster of windows. The reception-room is treated with white enamel, the same as the hall.

The living-room is trimmed with chestnut, and it is stained a soft brown color of Flemish tone. It has an attractive alcove at the side of the entrance, separated by an archway and provided with a paneled seat and bookcases built in. The opposite side of the room is taken up with the open fireplace, which is built in the center, with brick facings and a hearth of the same, and a mantel and overmantel rising up to the ceiling with panels and pilaster effect. On either side of this fireplace there are bookcases built in, over which there are placed windows glazed with leaded glass.

The dining-room is finished with mahogany, and it has a high paneled wainscoting, and an open fireplace with red unglazed facings and hearth, and a mantel with paneled overmantel, etc. The butler's pantry is fitted with sink, dresser, closets, etc. The kitchen is fitted with all the best modern conveniences, and it has a large store-pantry, and a lobby large enough to admit icebox.

The second story is trimmed with white pine, treated



A UTOPIAN BEDROOM.

MR. H. G. WELLS, whose novels of future life have had such an extraordinary vogue, has drawn this bedroom of the future:

The room is of course very clear and clean and simple; not by any means cheaply equipped, but designed to economize the labor of repair just as much as possible. It is beautifully proportioned, and rather lower than most rooms I know on earth. There is no fireplace, and I am perplexed by that until I find a thermometer beside six switches on the wall. Above this switch-board is a brief instruction: one switch warms the floor, which is not carpeted, but covered with a substance like soft oilcloth; one warms the mattress, which is of metal, with resistance coils threaded to and fro in it; and the others warm the wall in various degrees, each directing current through a separate system of resistances. The casement does not open, but above, flush with the ceiling, a noiseless rapid fan pumps air out of the room. The air enters by a Tobin shaft. There is a recess dressing-room, equipped with a bath and all that is necessary to one's toilet, and the water, one remarks, is warmed, if one desires it warm, by passing it through an electrically-heated spiral of tubing. A cake of soap drops out of a store machine on the turn of a handle, and when you have done with it you drop that and your used towels and so forth, which also are given you by machines, into a little box, through the bottom of which they drop at once, and sail down a smooth shaft. A little notice tells you the price of your room, and you gather that the price is doubled if you do not leave the toilet as you found it. Beside the bed, and to be lit at night by a handy switch over the pillow, is a little clock, its face flush with the wall. The room has no corners to gather dirt, wall meets floor with a gentle curve, and the apartment could be swept out effectually by a few strokes of a mechanical sweeper. The door frames and window frames are of metal, rounded and impervious to draft. You are politely requested to turn the handle at the foot of your bed before leaving the room, and forthwith the frame turns up into a vertical position, and the bedclothes hang airing. You stand at the doorway and realize that there remains not a minute's work for any one to do.

THE TAPESTRIED FIREPLACE.

QUITE the most useful and ornamental conceit, says a contemporary, for hiding an old-style fireplace hearth or putting out of sight the dismal blackness of a "parlor heater" set into the original fireplace, as the fashion has been in the regulation rows of some brownstone houses—now rapidly vanishing—is the fitting of cheery, attractive, and pretty tapestries into frames like a picture, and having them used as "fireboards" once more.

For country cottages they are most desirable during the summer months. All that is needed is to take the dimensions of the hearth opening, both its width and height, and select from a large assortment of those already framed, or select the tapestry that will best suit the frame measurement required.

THE LINEN CHEST.

Now that the winter clothes have been put away and the house is clean and orderly and swathed in chintz and linen, says an exchange, it is time to replenish certain departments so that all will be in perfect order when the household returns to town in the autumn. The kitchen should be looked over, pots and pans mended or replaced, and other deficiencies remedied. The good manager tries to keep up her supply of household linen by adding a set each year; a pair of sheets and a pair of slips for each bed means a small expenditure in money, but a wonderful saving in the end. Old sheets are invaluable. In cases of sickness; as cleaning cloths; as ample wrappers for winter clothing; as protection curtains and dust covers; there is scarcely a limit to their usefulness. First they should have the selvedge edges turned to the center, and the worn middles torn off and replaced by hems, thus turning them into single and crib sheets. After they should be laid in reserve, always clean, for various uses mentioned. Worn table cloths can be cut into tray and meat cloths, and other pieces are the finest sort of wash cloths for cut glass and window cleaning. Sometimes a table cloth past usefulness will make half a dozen excellent napkins for every day. It is better to do the hemming by hand.

THE SUMMER HOME OF HARRY BILLINGS, ESQ.,
ELBERON, N. J.

THE summer home of Harry Billings, Esq., at Elberon, N. J., is illustrated on pages 78 and 79. It has a pleasing setting among the many trees with which the estate is well covered, and is well placed at some distance from the road. The prevailing winds are from the southeast, and a study of the plans will show that all the rooms have been planned with this point in view, and while the house is consequently cool in summer, it can be used in winter, for it is properly fitted with a heating apparatus. The style is free Colonial, with the exterior covered with clapboards ten inches wide, from the grade to the peak, and the whole painted white.

The roof is covered with long shingles of cypress and stained a dark green. The balcony floors are covered with canvas and are painted. The blinds are painted green.

The plan of the first story is unusual, as the rooms are arranged in an elongated manner, affording a free circulation of air and light from side to side.

The living-hall, square in form, occupies the principal part of the main house, and has at one side an open fireplace and at the other a Colonial staircase, which rises up and forms a balcony, which is carried around the hall at the second story, and forms a large well, practically making the living hall ceiling rise up two stories in height. This hall is finished with a white enamel painted trim, and it has a high paneled wainscoting, above which the walls are covered with a dull two-tone green treatment. The staircase has square painted balusters and a newel post formed of a cluster of the same, and a rail of mahogany. The open fireplace has brick facings and hearth and a mantel of Colonial style, with shelf supported on corbels.

Elliptic archways, on either side of the fireplace, open into the library, which is also finished with white enamel trim, and walls covered with a dull red effect. This library is also furnished with a brick-faced fireplace and mantel, and bookcases built in with leaded glass doors. One end of the room is octagonal in form, with each form pierced with a window, and presenting an interesting vista of the greensward of the lawn, beyond which the eye rests upon the Atlantic Ocean.

Similar archways from the living hall, as already described, open into small lobbies, beyond which is the dining-room, treated with a white painted trim. It has a white painted wainscoting, paneled to the height of eight feet, and furnished with a plate-rack. The ceiling is heavily beamed and ribbed. The butler's pantry is well fitted with sink, drawers, dressers, and cupboard, all of which are well ventilated. Beyond this butler's pantry is placed the rear hall and stairway, opening into the kitchen and its dependencies, which are furnished and fitted with all the best modern conveniences.

The second story is treated with white painted trim, and furnished with mahogany doors. This floor contains the owner's suite, consisting of one large bedroom, bathroom, boudoir, and a nursery with children's bathroom attached. There are also two guest rooms, each provided with a private bath, and plenty of good closets, well fitted up, etc. Over the kitchen extension there are four servant bedrooms and bath. These servant quarters are trimmed with ash and cypress. The third floor contains several rooms and trunk rooms. The bathrooms throughout are tiled, and are furnished with porcelain fixtures and exposed nickel-plated plumbing. A cellar, cemented, contains the heating apparatus, fuel rooms, etc.

Mr. Warrington G. Lawrence, architect, 3 West 29th Street, New York.

CANVAS CHUTE FIRE ESCAPES.

THE most favored type of fire escape in Great Britain at present is undoubtedly the canvas chute, of which thousands are in use in public buildings, theaters, hotels, warehouses, asylums, hospitals, private mansions, and schools. One of these is capable of emptying a school dormitory fifty feet from the ground, costs little more than \$50, is exceedingly light, and may be kept just under the window sill in an unobtrusive manner.

Other escapes in use at schools include the canvas sling, the canvas bucket (which is provided with any required length of the finest manila rope), and a gun-metal brake, by which the person escaping from a burning building can control the speed of his descent at will.

The canvas belt or sling fire escape is also much favored, and is, if anything, still simpler in its working than the canvas chute already described. It lies coiled up just inside the window; one end of the rope, which is carefully calculated to reach the ground, being made fast to steel staples, in the wall just beneath the window.



THE GARDEN MONTH BY MONTH.—APRIL.

APRIL is a busy and dangerous month in the garden. It is busy because there is much to do. It is dangerous because there is harm in trying to do too much, or in getting work done before the season has really begun. April weather is far from being settled, and even warm balmy days do not mean that all danger from frost or from premature effort is at an end. Outdoor work can now be started in earnest, although it is still largely of a preparatory nature. The lawns should be cleaned up, but the winter protection of the bulb beds should be removed but slowly. Roses and hardy shrubs that do not bloom early may be pruned, but climbing roses should not be cut. When the ground becomes mellow seeds of many kinds can be planted out of doors, but it should be remembered, that plants from seeds planted too early do not develop as well as those planted when the ground is in thorough condition. Pansies, daisies, and morning glories can be sown early.

APRIL FLOWERS.

AKEBIA QUINATE, Alyssum Argenteum, Anemone Blanda, Bellis Perennis, Dicentra (Bleeding Heart), Dicentra (Dutchman's Breeches), Dodecatheon, Forsythia (Golden Bells), Sanguinaria (Blood Root), Saxifrage, Uvularia (Bellwort), Vinca (Periwinkle Myrtle), Violets.—I. D. Bennett.

WILD FLOWERS IN MARCH AND APRIL.

EPIGAEA REPENS (Trailing Arbutus), Symplocarpus Fœtidus (Skunk-Cabbage), Caltha Palustris (Marsh-Marigold), Hepatica Triloba (Hepatica), Erythronium Americanum (Dog's-Tooth Violet), Sanguinaria Canadensis (Bloodroot).—L. K. Miller.

WILD FLOWERS IN APRIL AND MAY.

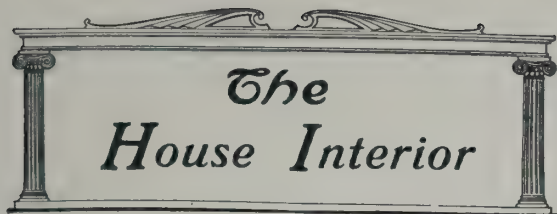
OAKESSIA SESSILIFOLIA (Bellwort), Anemone Nemorosa (Wood Anemone), Anemonella Thalictroides (Rue Anemone), Dicentra Cucullaria (Dutchman's Breeches), Dicentra Canadensis (Squirrel-Corn), Saxifraga Virginiana (Early Saxifraga), Trillium Grandiflorum (Large White Trillium), Trillium Erythrocarpum (Painted Trillium), Trillium Erectum (Wake-Robin), Trientalis Americana (Starflower), Tiarella Cordifolia (False Mitrewort, Foam Flower), Mitella Diphylla (Mitrewort), Actæa Alba (White Baneberry), Actæa Rubra (Red Baneberry), Cimicifuga Racemosa (Black Snakeroot), Gaultheria Procumbens (Wintergreen).—L. K. Miller.

PRESERVING FLOWERS.

PROFESSOR CONSTANTINE GREGORY of Naples has invented a new chemical process for the preservation of flowers and foliage, says the weekly Scientific American. When the professor submitted the results of his first experiments to the Neapolitan Institute for the Advancement of Science, a few weeks ago, the association, after carefully examining them, requested the preservation of some plants which they described, and which in their opinion presented the greatest difficulties owing to their peculiar nature. The professor completed the trial set before him, and he has presented some splendid examples of begonia and orchid leaves which have a remarkably natural appearance. In recognition of this work he has been awarded the silver medal of the institute. The professor is now engaged upon the extension of his invention to fungi, and in the event of his achieving success he will be presented with the society's gold medal.

POISONS AS PLANT STIMULANTS.

WITHIN the last two years the idea that traces of poisons may act as plant stimulants, says Collier's Weekly, has served as the basis for considerable investigation at the Agricultural College at Tokio. The researches there have had for their object the study of the action of various salts upon several economic plants of that country, especially on rice. These Japanese investigators have had the most success with the use of small quantities of manganese. An application of twenty-two pounds of the oxide of manganese per acre gave a yield of rice one-third greater than that obtained from the control field where no stimulant was used. A similar effect followed the use of manganese on the soil where flax was grown. This line of experimentation is being followed up, and it will be of interest to see if these investigators will be able to find a commercially profitable method of forcing greater crops from a given area of land.



NEW WALLPAPERS.

PANELED effects continue to be popular, with each design presented in several colors. White and cream grounds seem the most serviceable.

The less color there is in the background of an inexpensive flowered paper, says a contemporary, the better it wears. Blue and pink grounds for bedroom papers are apt to fade, as they are often printed on paper that is too thin, and the plaster in the wall extracts the color. This is why it is better to pay not less than 35 cents if you are buying moire paper; it is false economy to pay for hanging a paper that is bound to lose its color.

Very pretty borders come to outline the panels. A rose and ribbon effect is much admired. The corners come in separate pieces, which makes the panel a prettier shape than when it is only outlined with the running border. Below the panel a plain felt can be used, or a little diaper pattern of a V.

The leather papers, although imitations, are beautiful. In soft bronze effects, with a sheen of gold running through them, they make very handsome dens and dining-rooms, and are very well suited to rooms containing mission furniture and paneled walls. They can also be used for vestibules, and are comparatively new for this purpose.

English papers do not follow the style of paneling for downstairs rooms, but a great variety of plain and two-toned wallpapers with decorative friezes are shown. Some of these are in the poster style, and are full of rich color and good drawing.

There are some good things in art nouveau. One paper made in this country, with a lotus flower design and in style somewhat Egyptian, comes in several shades. The brown and gold treatment is especially good. This design in brown, with its rich gold background, would look extremely well in a dining-room with stained brown woodwork above a dado of dark brown crêpe paper or burlap.

Another color of the same paper would look charming with white woodwork for a dining-room or a living-room. It is in blue and green with a background of white, but has a burlap tracery in blue over the white. This looks equally well when used on a wall above a blue felt or a dull green gray felt. A blue floor covering could be used with the first mentioned coloring and a green with the latter.

Among the inexpensive bedroom papers there are some called allover designs, as they are intended to be used in attics where sloping ceilings require papering with the same material as the side wall. The thistle, poppy and clematis in the designs are all most attractive and the patterns are carried out in quite a number of good colors.

Some of the more expensive papers, with stronger colors and touches of gold through them, are not at all good. There is a pretty 40-cent paper in two tones. The design is a Japanese chrysanthemum, the flower being the cream of the paper before any design is printed on it. The background is pale blue, green or red. It would make a suitable paper for a country dining-room or a hall in a country house or for a large bedroom in city or country. It would make any room look quaint, and is one of the prettiest papers seen this year. In green in a low ceiling hall, with mahogany furniture and white woodwork, it would be ideal.

There are some German papers in two-tone effects that are of the same class and make ideal hall papers. It is a relief to have such a change from the orthodox plain felt for halls. In the past there have been so few figured papers that could be used for halls that people have been compelled to keep to plain felts as a safe choice. It is a tragedy when an unsuitable, loud hall paper is used, and a costly mistake to remedy.

Among the English bedroom papers are patterns of fine color in two-toned effects to be used with flower and bird friezes. The love bird frieze is a great favorite and comes in blues and greens.

The old-fashioned flock papers are still made and used as filling above high paneled dados. They make beautiful wall coverings for libraries. They are made in all solid colors and a few colors in Elizabethan designs for very large rooms.

There are always new buckrams and new weaves of burlap, but the same old burlap made ten years ago sells to-day and will always be a standby for rich, plain wall covering, whatever new name it is called by.

In selecting papers many things have to be considered; the aspect of the rooms, the woodwork, the furniture to be used, the rugs, and, above all, the use the room is to be put to. Color is an important factor in

adding to or diminishing space, in making a room seem dark or light.

Most people find a green room restful, a red stimulating, a cold blue depressing, and a yellow cheerful. It is therefore as important to choose the right color for walls as good designed wallpapers.

Also see that one tone predominates where the rooms open out on each other. One cannot be too careful in making a selection of papers. What is pretty in a roll may be unsatisfactory on the wall, and if the salesman tells you a paper is a good seller beware of it. The majority of people have bad taste, and far too much poor stuff is made because the people will have it and it sells best. Who has not been struck by the kaleidoscopic effect given when entering a hall where a yellow room is on one side, a green on the other, a blue beyond that, and a red in another direction? Harmony is what must be aimed at if the home is to have the atmosphere of beauty and repose.



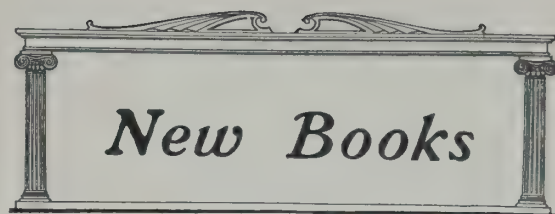
THE MODERN FIREPROOF HOUSE.

AN account of fireproof construction and methods as illustrated in the new Hotel Astor, in New York, printed in Fire and Water Engineering, is interesting as illustrating one of the most highly developed systems recently installed. Notwithstanding that the construction of the hotel has been such that it is regarded as thoroughly fireproof, arrangements have been made to fight whatever incipient fire may start in the building from whatever cause and in whatever part. The stairways and exits have been planned as carefully as if the hotel were one of the old-fashioned non-fireproof type, and it seems as if the architects had borrowed the idea of the watertight compartments of an ocean steamer or a modern battleship in the system they have adopted for isolating any such incipient blaze. The elevators, passenger and freight, are enclosed in terracotta shafts. The former have doors of iron and wire-glass; the latter of kalamined (metal-covered) wood. The electric conduits are in shafts of the same material, with kalamined doors at each floor—as have all the other shafts in the building. All shafts have ventilated shafts, with thin glass at the top. The stairways are inclosed in terra-cotta shafts, with kalamined doors, and doors of the same kind divide the corridors into sections. These doorways open on the stairways, and the corridors are also open, as a rule.

In case of fire being announced by any of the alarms, those in the office on the street floor are at once warned that a fire has broken out. The clerk has then only to turn a crank alongside of him, and immediately all the doors swing noiselessly shut. They do not lock, but can be pushed open for people to pass through, after which they instantly close again. In this way no panic can be caused by the spread of smoke throughout the building.

As to the fire-alarm system: If a careless guest, on leaving a room, drops a lighted cigar or cigarette butt, and thereby sets fire to the curtains or any other drapery, notice thereof is given by a thermostat, with an attachment consisting of a small ammonia diaphragm, air-tight and filled with ammonia. One is fixed in the ceiling of each room, and is connected by wires with an annunciator in the hotel office. As soon as the heat reaches 130° Fahr. the boiling ammonia expands the diaphragm and closes an electric current. An automatic alarm is instantly given and a red light in a small bulb in the annunciator shows the number of the room. An electric gong is also rung in an elevator in the engine-room, which summons the house fire brigade; electric bells are set ringing in the hallways and in the servants' quarters on the floor on which the fire has broken out. All over the building are electric fire gongs, each operated from the office. Red lights show the location of the stairways, and all are lit by both gas and electric lights.

The building is equipped with three four-inch standpipes, with outlets on each floor, the cellar and the roof. At each outlet are 100 feet of linen hose, nozzles, hooks, and auxiliary fire extinguishers. A header is fixed in a hanging ceiling on the roof, and into it the fire lines are connected, the header itself being connected to the three roof tanks, whose capacity is about 25,000 gallons. A gate and check-valve control each tank outlet of this supply, which is only an emergency supply until the fire pumps can be operated. They are connected in the cellar to an underwriters' fire pump, and cross-connected with the four house pumps. In the cellar they are connected into a header, with four Siamese connections on the street for fire engine connections.



THE COUNTRY HOME.

THE COUNTRY HOME. By E. P. Powell. New York: McClure, Phillips & Co. 1905. Pp. 383. Price, \$1.50 net.

AN observant person who has lived in the country for thirty years is bound to accumulate information of value, and this Mr. Powell has done to an unusual extent. His book, which is based on extensive intimate and personal experience, is addressed to every one who possesses, or hopes to possess, some land of his own which he wishes to make profitable or beautiful. It is a practical book on making the first essentials of the country home, and gives a host of valuable suggestions on choosing the land, "growing" the house, water supply, lawns, orchards, truck gardens, and the like. And the book is not only practical, but it is one of extraordinary value, filled to the brim with helpful suggestions and kindly advice of the most practical sort.

The author's point of view, while not new, is well worth emphasizing. It is to get the full value of country living. He rightly declares that it is not sufficient merely to have a country home, but one should live in the country and be of it. One should understand the meaning of fields and their uses; one should know something of growing flowers and vegetables; one should be familiar with the birds, animals and insects that give so much variety to country life. One should, in short, know how to live in the country, and get the most of its freshness and value. It would have been well worth while to have written a theoretical book on these lines; but Mr. Powell draws from a ripe personal experience. His book is not concerned with theories, but with facts; he shows how to make the home and how to live in it. It is an admirable book, written from an admirable standpoint, and must greatly add in helping to a real knowledge of the vast usefulness and beauty of real life in the country. It can be unqualifiedly recommended to all country residents.

ART HARDWARE.

LOCKS AND BUILDERS' HARDWARE. A Handbook for Architects. By Henry R. Towne. New York: John Wiley & Sons. 1904. Pp. 1118. Price, \$3.00.

THE development of artistic building hardware, more particularly that concerned with locks and bolts, is a comparatively recent development, which, within a few years, has received extraordinary impetus in America. To one whose acquaintanceship with locks is chiefly concerned with the insertion of keys, this book will come as a surprise and revelation. It deals with locks and fastenings of every kind in a very complete and thorough way. It is abundantly illustrated and handsomely printed, and is a very ample and admirable handbook of the subjects of which it treats.

The scope of the book is very broad. It opens with a glossary of technical terms—itsself an impressive illustration of the ramifications of this great industry—and is followed by some narrative and historical chapters dealing particularly with the lock industry. The Mechanics of Hardware forms the next section, followed by a treatise on Schools of Ornament, by Mr. W. W. Kent, in which the characteristic development of the various historical styles is brilliantly summarized. The concluding portions of the book are concerned with descriptive and informative chapters on modern builders' hardware, in which the latest developments of the industry are described and illustrated at great length. The book has been planned in a comprehensive and logical manner, and contains a vast amount of useful information admirably digested and arranged.

HANDBOOK ON FIRE PROTECTION.

HANDBOOK OF FIRE PROTECTION FOR IMPROVED RISKS. By Everett U. Crosby and Henry A. Fiske. Boston: The Standard Publishing Co., 1904. Pp. 363.

THIS is a book of extraordinary value and interest, summarizing, as it does, the latest and most developed rules on fire protection, and covering the whole topic of fireproofing and its allied subjects in a very complete and thorough way. Improved risks are those in which the subject of fire protection is judged of sufficient importance to call for special and serious consideration, and this book specifies and explains the best existing practices in relation to the subject. The subject is treated in a thoroughly comprehensive manner, the reprints of established rules being ably annotated by the authors. It is abundantly illustrated with well drawn diagrams and other illustrations.



STREET ARCHITECTURE.

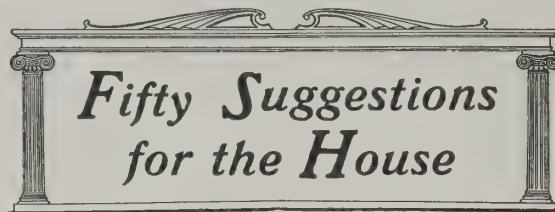
THE first principle to be laid down for town architecture, pointed out Mr. T. G. Jackson, in a paper before the Society of Arts, was that there should be a consistency, a regard for the surroundings, an absence of vulgar rivalry in display, corresponding to that consideration for others which was the essence of good manners among individual men and women; that ordinary houses should subordinate themselves to buildings which, from their public uses or their architectural importance might fairly claim precedence; that, in fact, there should be a "comity" of conduct in architecture as well as in society; any violation of which should be condemned by public opinion as in bad taste, inartistic, and intolerable. Another consideration that arose out of this, especially when there was a question of cutting through old towns and forming new thoroughfares, was that when the alterations approach or touch beautiful buildings whether old or new, they should be designed so as to fit them, and bring out their beauties and enhance their architectural effect. This was a principle that had been much more attended to on the Continent than in England. The Louvre must have gained enormously by the construction of the Rue de Rivoli, and the old Tuileries by the formation of the gardens and the Place de la Concorde. In England this principle seemed rarely if ever to have been thought of, new streets and roads having been planned solely for convenience, easy gradients, and economy, with very little thought of artistic effect. What splendid opportunities had been missed, for instance, when the alterations were made at Hyde Park Corner, which, though they had facilitated traffic to some extent, had destroyed the little there was of orderly arrangement, when Decimus Burton's arch and screen stood in some sort of relation to one another. A still worse failure was that at the sight of the old circus where Regent Street joins Piccadilly. The fault did not always lie with those who lay out thoroughfares in London. Considerations of economy had to receive attention, but they should not always be allowed to prevail over every other. When unusual opportunities occur of making a beautiful street, it would be unworthy of a great capital to treat the matter solely or even mainly from the commercial point of view.

Another principle to be observed in altering or improving an old town should be that the general lines of the main streets ought to be respected whenever possible, and the general conformation of the plan as little altered as was consistent with public convenience. Considerations of convenience on the one hand and of beauty or sentiment on the other were seldom wholly irreconcilable. Streets were not, or should not be, mere mechanical contrivances for getting from point to point as speedily as possible. They had never been so regarded at any age but our own. One might almost say they were not so regarded now in any country but this. They should be beautiful and interesting, and so disposed as to show off their buildings to advantage and to preserve faithfully their historic traditions. One very awkward result would be avoided if the lines of old thoroughfares were taken in laying out new ones. Everybody must have noticed the sharp triangles to which corner houses come in most of the new streets that have been driven through crowded districts of London. They were caused by the fact that the general trend of the old streets lay obliquely to the line chosen for the new ones.

But bad as these sharp-ended sites were for architectural effect, and inconvenient as they must be for internal plan, they were not so bad as the rounded ends and corners which had been the fashion in new streets. Rounded angles were seldom agreeable in architecture, and were best avoided. They deprived one of the firm outline and positive drawing which the eye demands in builder's work, and substituted for it a certain weak indefiniteness which was destructive of true form, and confused the elements of proportion. Whether in large or small buildings this rounding of the mass was equally injurious. Small buildings, perhaps, needed sharp square forms and positive outlines even more than large ones, and yet nothing could be less satisfactory to the eye than rounded fronts on a great scale. As to the best way of laying out street architecture on a general scheme, should it be treated as one whole, a single design to which every builder of a part must conform, or was the building line to be the only rule, and was all style, scale, and architectural treatment to be left to individual taste? Was the architecture of the street to be individual or collective, accidental or regular? There

was much to be said for either alternative; but the unrestrained genius of the commercial architecture of to-day was to be regarded with misgiving. The result would probably be a competition in which every house would try to outshine its neighbors by cramming on more ornament, overpowering them in splendor and overtopping them in height. Better far than this the monotony of Gower Street or the unloveliness of Wimpole Street.

The tide of self-advertisement is rising. It has laid nine-tenths of our architecture at its feet. Art is supposed to consist in ornament, and ornament is valued according to its quantity, not its quality. Perhaps the crucial difficulty of street architecture is the shop-window. In these days of display, it is thought necessary to abolish the front wall of the ground floor and to substitute huge sheets of plate-glass. The architect must reckon with these shop fronts, but how were they to be treated architecturally so as to be tolerable, or actually an element of beauty in a facade? To bring the new construction, consisting of two steel stanchions and a beam across, within the domain of art, it is only necessary that it should be visible. There is no reason why the stanchions and bressummers should not be treated architecturally, instead of, as now, being concealed, so that the building appears to be supported on the edge of a plate-glass shop front. Until we made up our minds that, if we accepted the new mode of construction by iron, we must break definitely with the traditions of brick and stone there would be no hope for us.



14. BEAUTIFUL ROOMS.

THE true method of making a room beautiful is to make all the necessary and useful things in it beautiful; so much is this true that it becomes almost impossible to design a really beautiful room that is to have no useful work done in it or natural life lived in it. An architect called upon to design a room in which nothing more earnest is to be done than to gossip over afternoon tea has, indeed, a sad job. For a room must always derive its dignity or meanness from, and reflect somewhat, the character and kind of occupation which is carried on in it.—Barry Parker.

15. LOCATION OF FURNACE STACKS AND REGISTERS.

To insure the best results the location of furnace stacks and registers should be planned out before the work of construction begins; for while the building need not be planned to suit the heating apparatus, it almost always happens that the setting of the partitions, swinging of doors, etc., can be arranged so as to favor the placing of stacks and registers without seriously affecting any desired arrangement of the plan. It is generally conceded that the hot-air stacks should be placed in the partitions and as near to the furnace as practicable, and that all horizontal branches should be as short as possible. The registers should be placed as near the stack as possible; they should not be placed near the windows, nor where the doors will swing over or against them, nor in the floor near an open fireplace. Whether the registers shall be placed in the floor or partitions is a matter that should be determined by the owner. It sometimes happens that the stacks must be placed in an outside wall. When such is the case, the stacks should be double and wrapped with asbestos paper. Stacks should not be placed in outside walls when it is possible to avoid it.—Frank E. Kidder.

16. SMOKING-ROOM VENTILATION.

THE smoking-room should be ventilated by a three-foot pipe carried to the roof. This would keep the room comfortable for those who smoke as well as for those who do not. In too many cases the smoking-room is so arranged that the smoke goes through all of the bedrooms by natural drafts through the halls.—Francis C. Moore.

17. THE BEDROOM COUCH.

A COUCH is almost a necessity in a bedroom. The marvel is that so many good housekeepers neglect to provide one, especially in a guest-chamber, where it is as important as the bed itself. A visitor would have to be bold, indeed, to disarrange one of the modern beds for a half-hour's nap before dinner.—Lillie Hamilton French.



THE WONDERS OF LHASSA.

THE English occupation of Lhasa, the sacred city of Tibet, the one great city of the world that has remained unknown and unvisited by Western explorers until last year, constitutes one of the very notable achievements of 1904. The correspondent of the London Daily Telegraph has described numerous wonders of this old-new city; his description of the Nechung monastery—the monastery of the Chief Oracle of Tibet, is reproduced below. It is certainly the first account of this remarkable edifice given in English.

The monastery lies in a grove of trees just a few hundred yards to the east of the Daipung Monastery, and only its golden roof, shining among the trees, marks its existence. On entering the gate one found one's self in a large, square courtyard, paved with stones, with a small granite monolith in the center with the usual gilded top. On each side was a large cal-dron, in which incense was burnt in our honor, and between these a small enclosure full of hollyhocks. Round the courtyard, on three sides, ran broad galleries, supported on two rows of columns, painted red, and these galleries were first visited. Round all the middle row of pillars were hung suits of ancient armor made of short, flat lengths of steel, extremely flexible, bound with leather, and probably entirely arrow-proof. Above each suit hung the steel helmet. Spears, bows, arrows, and leather quivers also hung along the walls, and the whole formed a most interesting collection, most effectively set off by the long, broad galleries and by the curious and extremely well executed frescoes which surrounded the walls. These frescoes are done by water colors mixed with glue and laid on mud plaster. The subjects depicted are gruesome in the extreme, consisting chiefly of fearsome-looking demons torturing the bodies of the lost. Each fresco was, perhaps, ten feet square, and the predominating color was dark red, with green and blue and yellow in various hues.

Leaving the galleries, we came to the stone steps leading to the gumpa itself. These were flanked by two huge dogs, made of tin, and colored, one green and the other blue. At the top of the steps we found ourselves on the veranda of the temple. It is, perhaps, sixty feet long and fifteen feet broad. The floor is of small stones, polished and very slippery, and everything is most beautifully clean. Two rows of pillars, eight in each, support the roof. These pillars are painted red, and are covered round with dark red cloth. It is the tops of these pillars and the cornices which are so beautifully decorated. They are all hand painted, in a most exquisite pattern of blue and red and gold—no large splashes of color, but each little portion beautifully finished off, and the whole blending together in a delightful color scheme, which forms, together with the frescoes round the walls, and the brilliantly colored panels of the doors, a most vivid, pleasing, and artistic combination.

The six panels of the door are exceedingly handsome. Each is about twelve feet high, and on each is painted in red and white a human body of colossal size, after it has been flayed. The head is at the bottom of the panel, and the legs, twined round each other, decorate the top. Along the top and round all the lintels little wooden skulls are placed, so that every panel is bordered on every side by these skulls. Three brass chains divide the panels, and between are two great brazen knobs, so when all six panels are closed the three rows of brass and twelve great brazen knobs, with the background of red and white, make an extremely handsome entrance to the temple. The design on the panels does not sound handsome, but it must be remembered that the details take some time to realize, whereas the color effect is immediately striking. The temple itself is a large square room, with four rows of pillars colored red, from which, as also from the roof, hang numerous silken banners. The walls here are also covered with frescoes, but the interior was too dark to enable the subjects to be distinguished. At the end of the room, on each side of the brass gates leading to an inner temple, stand two great altars of lacquer work, and on each of them are seated three large brass Buddhas, dressed in silks and ornamented with turquoises, corals, and other stones. In one corner is a large chorten made of brass, and round the base are let in great bits of amber and turquoise. Yellow banners on lacquer poles stand against each of the foremost pillars, and along the walls hang ancient specimens of Tartar bows and arrows. On the floor were slightly raised wooden platforms covered with cushions, on which the lamas sit, and by the brass gates of the inner temple is a high pile of cushions for the head lama himself.

New Building Patents

The following list of New Patents relating to Building and Sanitary Science is prepared expressly for the SCIENTIFIC AMERICAN BUILDING MONTHLY by MUNN & Co., Solicitors of American and Foreign Patents.

A PRINTED COPY of the specification and drawing of any patent in this list, or any patent in print issued since 1863, will be furnished from this office for 10 cents, if exact date or number is furnished. Remit to MUNN & Co., 361 Broadway, New York.

BRICK, STONE, AND TILE.

BUILDING BLOCK. L. F. McClure, Kansas City, Mo. February 7	781,844
ARTIFICIAL STONE BLOCK. M. Q. Mullenix, Springfield, Ohio. February 14	782,351
ARTIFICIAL STONE BASE. C. C. McElhaney, Rockfalls, Ill. February 14	782,515
CONCRETE BUILDING BLOCK. G. L. Peabody, Pittsburgh, Pa. February 21	783,305
BUILDING BLOCK. A. H. Merrill, Toledo, Ohio. February 28	783,448
BUILDING BLOCK. E. Morenus, Cleveland, N. Y. February 28	783,452

CARPENTRY.

SECTIONALLY FOLDING DOOR. C. F. Kusch, Chicago, Ill. February 7	781,665
WINDOW. I. Fischer, New York, N. Y. February 14	782,743
WINDOW. Leicht & Zednik, Chicago, Ill. February 21	782,915
WINDOW. A. Woelfel, Chicago, Ill. February 21	783,164
WINDOW. C. D. Tabor, New York, N. Y. February 28	783,555

CONSTRUCTION.

FRAME STRUCTURE. J. H. Kassens, Greensburg, Ind. February 7	781,658
WALL CONSTRUCTION. R. F. Frost, Dows, Iowa. February 7	781,820
CONCRETE BEAM, GIRDER, ETC., WITH IRON BARS IN- LAID FOR BUILDING PURPOSES. H. Siegwart, Lucerne, Switzerland. February 7	12,315
WALL CONSTRUCTION. J. A. Ferguson, Denver, Col. February 14	782,441
METAL COLUMN. W. F. Eichfeld, Milwaukee, Wis. February 14	782,495
GREENHOUSE OR OTHER STRUCTURE. E. W. Hitchings, Montclair, N. J. February 14	782,561
BUILDING CONSTRUCTION. Murphy and Camp, Chicago, Ill. February 14	782,810
CONCRETE METAL CONSTRUCTION. W. H. Roney, Chicago, Ill. February 21	782,877
CORNER PIECE FOR HANGING GUTTERS. H. C. Hames, Columbus, Ohio. February 21	782,950
BUILDING CONSTRUCTION. E. G. Perrot, Philadelphia, Pa. February 28	783,539
WALL SLAB. D. E. Roberts, Fort Dodge, Iowa. February 28	783,544

ELEVATORS.

ELEVATOR. J. H. Millsaps, Washington, D. C. February 7	782,159
SAFETY DEVICE FOR ELEVATORS. T. W. Jenkins, Philadelphia, Pa. February 21	783,205

FIREPROOFING AND FIRE EXTINGUISHMENT.

FIREPROOF BLOCK. Sheldon and Nasselroad, Stuart, Iowa. February 7	781,746
RELEASING DEVICE FOR FIREPROOF WINDOWS. A. W. Cooper, Chicago, Ill. February 7	12,312
FIREPROOF SHUTTER. F. C. Roberts, Philadelphia, Pa. February 14	782,468
FIREPROOF WINDOW. E. H. Lunken, Cincinnati, Ohio. February 14	782,675
EMERGENCY FIRE APPARATUS FOR BUILDINGS. Cotton and Larish, Dedham, Mass. February 14	782,778
FIRE PROTECTIVE APPARATUS. Erb and Morell, Chelmsford, Canada. February 21	782,903
FIREPROOF STAIR SHUTTER. M. E. Hultquist, Brookhaven, Mass. February 21	783,041
AUTOMATIC FIRE EXTINGUISHING APPARATUS. C. E. Puell, North Plainfield, N. J. February 28	783,418
FIRE PROTECTION FOR STORES. A. A. Hanson, Decorah, Iowa. February 28	783,634
FIREPROOF PIER FOR BUILDINGS. G. Liebau, Maurer, N. J. February 28	783,791

HARDWARE.

HINGE. F. P. Pfeiffer, Jr., New Haven, Conn. February 7	781,905
SASH LOCK. A. L. Ramage, Kansas City, Mo. February 7	782,051
SASH LOCK, LIFT, AND SUPPORT. F. Neudorff, St. Joseph, Mo. February 14	782,412
SASH LOCK. T. E. Smith, Somerville, Mass. February 14	782,764
SASH LOCK. D. G. Bolton, Camden, N. J. February 21	783,013
UNLOCKING DEVICE FOR SHUTTERS. A. Ensor, Jersey City, N. J. February 21	783,252
SASH FASTENER. F. H. Ward, New York, N. Y. February 21	783,338
LOCK. G. W. Abernethy, Lowell, N. C. February 21	783,351
SASH LOCK. I. G. French, Orange, Mass. February 21	783,373
DOOR LOCK. Otis and Sundh, Yonkers, N. Y. February 28	783,731

HEATING AND VENTILATION.

VENTILATION OF BUILDINGS. D. Fairbanks, Charlestown, N. H. February 7	781,644
VENTILATING COWL. E. J. Prescott, Portland, Maine. February 7	781,730
VACUUM HEATING SYSTEM. J. Collis, Des Moines, Iowa. February 7	781,767
HEATING APPARATUS. N. M. Eddy, Alpena, Mich. February 7	782,116
HEATER. W. Richter, New York, N. Y. February 14	782,699
HOT AIR REGISTER. H. Symonds, East St. Louis, Ill. February 14	782,707
RADIATOR ATTACHMENT. E. L. Bolts, Butte, Mont. February 21	783,242
ADJUSTABLE FOOT REST FOR RADIATORS. H. E. Jeninson, Fitchburg, Mass. February 21	783,377
VENTILATING SYSTEM. M. E. Cooley, Ann Arbor, Mich. February 28	783,616

MISCELLANEOUS.

ROOFING AND SHEATHING CEMENT. J. R. Kelly, Quincy, Ill. February 14	782,507
METAL LATH. P. Kuhne, Brooklyn, N. Y. February 14	782,667

PLUMBING.

LAVATORY. J. Maddock, Trenton, N. J. February 14	782,753
SINK TRAP ATTACHMENT. A. Savard, Omaha, Neb. February 14	782,760
WATER CLOSET TANK. J. G. Crosby, Port Huron, Mich. February 21	12,321
WALL CLEAN-OUT AND BACK VENT FITTING. H. J. Luff, Cleveland, Ohio. February 28	783,586

TOOLS.

PLANE. W. H. Gardner, Jr., Park City, Utah. February 7	781,771
LEVEL. L. H. Bradshaw, Allegheny, Pa. February 7	781,995
SAW. J. L. Hiers, Atlanta, Ga. February 14	782,396
PAINTER'S OR PAPER HANGER'S ROLLER. W. Fortier, Minneapolis, Minn. February 21	782,840

RESIDENCE OF JAMES TURNER, ESQ.,

MONTCLAIR, N. J.

ON pages 80 and 81 is illustrated the residence of James Turner, Esq., at Montclair, N. J. The classic entrance and portico at the front, with its Ionic columns, are the principle features of the exterior. It is constructed of stucco, of a grayish tone, from the grade line to the peak, while the trimmings, of wood, are painted white. The roof is covered with shingles and is left to weather finish. Dimensions: Front, 108 ft.; width, 57 ft.; exclusive of porch and terrace. Height of ceilings: Cellar, 8 ft. 6 in.; first story, 11 ft.; second, 10 ft.; third, 9 ft.

The plan shows a central hall, with rooms on either side. This hall is trimmed with white pine and finished with white enamel with an egg-shell finish. Ionic columns separate the entrance hall from the staircase hall and form an arcaded effect. The staircase at the side is provided with a mahogany rail and treads, while the remainder is treated the same as the trims. The large picture window at the end of the hall, which opens on to a balcony, forms an attractive vista upon entering the hall.

The drawing-room is treated with white enamel finish and has an open fireplace furnished with white enamel tile facings and hearth, and a mantel.

The library is trimmed with mahogany and has a beamed ceiling, bookcases built in, and an open fireplace furnished with tiled facings and hearth and a mantel of mahogany. There is also a bay window with paneled seat. The den is an attractive little apartment with fireplace.

The dining-room is trimmed with mahogany and has a chair rail and a passage to the side entrance and recess for buffet, separated by mahogany columns of Ionic style. The fireplace has tiled facings and hearth and a mantel of mahogany with columns rising to ceiling. The butler's pantry is provided with sink, drawers, dressers, etc. The kitchen and its dependencies are fitted up with all the best modern conveniences.

The second floor contains the sleeping rooms, boudoir, dressing-room, and bathrooms. This floor is treated with white enamel and the bathrooms have tiled wainscotings and paved floors, porcelain fixtures and exposed nickelplated plumbing.

The third floor contains the servant quarters and guest rooms. A cemented cellar contains the laundry, heating apparatus and fuel rooms, and cold storage.

The gardener's cottage, containing the usual necessary apartments, is arranged with an entrance to it from a lower terrace, and is in harmony with the house. The tea-house, which is placed on the upper terrace and at the level of the second story of the gardener's cottage, adds much to the beauty of the surroundings. A pergola from this tea-house extends the entire length of the terrace and connects with the stable, which is also designed in harmony with the house, and of the same material. This stable and carriage house is planned with a view to the accommodation of all the necessary horses and carriages required, and with all the best sanitary regulations complete. The coachman's quarters are placed over the carriage house, and are replete in their appointments.

Mr. Frank Freeman, architect, 132 Nassau Street, New York City, N. Y.

RAG CARPET.

RAG carpet goes by a different name these days than formerly, says an exchange. But as a "rag-style" carpet it is still hit or miss and as much of a mystery as in its early days. It is more often now, however, made up with an idea of the effect, and different materials are used to produce the desired result. A charming rug is made of outing and canton flannels. The warp of the rug is white, while the woof is in the outing flannel colors. The tones are a soft pink or pale green, with the white canton flannel woven in for a velvety border at each end. One must see to appreciate the beauty of a white canton flannel rag carpet.

There is the ordinary rag carpet, made of simple materials and in one or two or many colors, and the more elaborate one made of fine materials. Into the latter go velvets, silk damasks, tapestries and wools. Cretonnes are woven into others, combined with a plain warp. A rag-style rug which is charming is woven of Singapore lattice. This is a curtain drapey—a lattice-like material, as its name implies. It comes in delightful soft, dull shades, and when cut for weaving in the rugs the irregularities of the lattice work form a thick nap, which gives the rug a rich, warm effect. A rug of the kind, a beauty, has the body of the rug in a clear light gray, with stripes of pale sea green, brought out with a bit of deep green, which form a border at each end.

A woman who has a cretonne hung bedroom or dressing room may have cretonne woven into rag-style rugs, with a plain color for center or border which matches the color tone of the room.

Publishers' Department

A COMPLETE TOOL SET.

MANUFACTURERS have always understood that the demand for a good article is the mechanic's mandate. The enterprising and capable ones have tried at all points to respond. This is conspicuously the case with the Goodell-Pratt Company, and in its celebrated "Home Companion Tool Set" the response has been in the form of a complete assortment of strictly high grade tools, every piece and the parts being of a type familiarly called the Goodell-Pratt quality. We know of no set of tools of its scope that has provoked a wider discussion of merits on matters of shape, adaptability, material, workmanship, and temper. The kit is made up exactly of the things one needs, and is not likely to have at hand. It comprises two ratchet screw-drivers, one hand shave, one hack saw frame with six tooth blades, three fine tooth blades, two extra fine tooth blades, and one polishing bone saw, for the frame; one glass cutter, one cocobolo handle automatic drill with eight additional drills for the handle, from 1-16 to 11-64 inch; one universal tool handle for holding gouge, gimlet, chisels, reamer, screw-driver, saw, and brad-awls; one nail set, one prick punch, 1 saddler's drive punch, one solid punch, and one oil stone. This set is something entirely new; not of the ordinary "mail order" quality, nor is it a toy collection. The selection is of such well poised and proportioned tools, that a user gets the sensation of perfect control very soon after getting in touch, and the implements in no way retard the highest manipulating faculty of the hand. The firm's literature contains particular descriptions and clear illustration of nearly three hundred devices and accessories. It is a perfect exposition of all the valuable articles made at the works, Greenfield, Mass. It will be sent on request.

ROOFING TIN.

A VERY remarkable addition to the tin industry of this country is supplied by the great output of the tin plate works in Philadelphia, owned and operated by the N. & G. Taylor Company, of the same city. This firm was established in 1810, and the familiar "Taylor Old Style" roofing tin has been made for nearly seventy-five years. Although the boast is that this brand has been made in the same slow, sure way all this time, it is not to be supposed that the Taylor Company has played a business tune on one note continuously. It has been invariably forcing its mechanical improvements, enlarging its capacities, and grudging nothing praiseworthy in sustaining the reputation and extension of the goods of the old house. This firm has always had the courage of its convictions. It has stood for the production and use of the old material against all cries of being outworn or outgrown. It has hammered away at its practise to make tin plate stand the emphatic test of longest endurance, by careful, old-fashioned, hand-labor methods, and so well that all attempts to improve on the "Old Style" have been by others in other directions. To-day no other tin is made in the same way as Taylors', nor of the same materials. The evidence in favor of its enduring qualities, in the face of the excessive contrasts of our weather, is sufficient to convince a practical mind interested in roofing that a constant patching and repairing of a bad tin roof is a hopeless occupation, and that the tin should be immediately ripped off. This firm publishes a series called "Rufus the Roofer," and its brochure, "The Arrow," devoted to topics of interest to the trade. There is always in "The Arrow" a selection of a theme in relation to the roofing industry, presented in a fashion distinct from the usual style of treatment. This literature, in connection with a "Guide to Good Roofs," will be sent free. The firm has its superb system of rolling mills and blockplate plant at Cumberland, Md. The general offices, Mariner and Merchant Building, Chestnut and Third Streets, Philadelphia, Pa.

A NATIONAL INSTITUTION.

PRESIDENT ROOSEVELT, in his message opening Congress in December, pointed out that the business of insurance had attained national proportions, and his words will be remembered by those who read and examine the Annual Statement for the year 1904 of the Prudential Insurance Company. This company wrote and issued during 1904 over \$312,000,000 of paid-for life insurance, increasing the number of policies in force to nearly six millions, and bringing the amount of insurance in force to a sum exceeding one billion dollars. This company, whose agencies extend to every State in the Union, is a truly national institution, not only in size, but in the position which it occupies as

the trustee for the funds of the millions in all parts of the country, thus furnishing the means of making provision for the future for themselves and their dependents.

That this trust is well placed is shown by the fact that the company has accumulated assets of over \$88,000,000, and a surplus exceeding \$13,000,000, the liabilities being \$75,000,000. The exhibit this year gives a very plain and convincing statement of the character of these assets and of the security which is afforded on its loans on bonds and mortgages, and collateral securities. One very interesting item of the statement is the amount paid to its policyholders. Over \$13,000,000 were paid to policyholders during 1904. The company has paid to policyholders to date a total of over \$92,000,000. It is certainly impossible to estimate the amount of good which the distribution of this vast sum of money has accomplished for the American people who have been its recipients. The company has at different times made changes and concessions in its policies, which resulted in giving additional benefits to those insured. Wherever practicable these concessions are made retroactive; and up to the present time the company has distributed in cash dividends and other concessions, not stipulated in original contracts, and voluntarily given to holders of old policies, over five million dollars. The company will furnish any information concerning its policies to those who write to the Home Office, at Newark, N. J.

A COMPACT AND ECONOMICAL KEROSENE ENGINE.

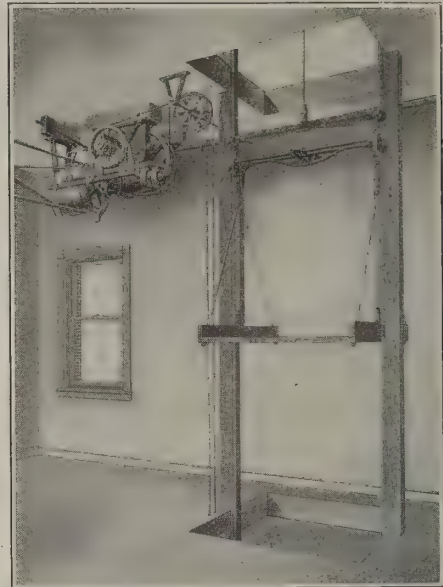
THERE is a growing demand on the part of the users of engines of moderate horse-power for a light motor, that will occupy little space, can be quickly started and stopped, that is simple in its construction and operation, is thoroughly reliable, and above all that will yield its rated horse-power, day in and day out, with a reasonable economy of fuel. The accompanying drawings illustrate the most important features in a kerosene engine in which a successful effort has been made to meet the above requirements. The engine is simple in construction. It consists of a cast-iron base, reaching to the center of the crank-shaft, in which is placed a galvanized-iron kerosene tank holding enough oil for a whole day's run. To avoid the inconvenience of having to withdraw the tank for filling, a projection is cast on the side of the base and provided with a lid, on lifting which, the kerosene may be poured direct into the funnel of the tank. The crank-case and cylinder casting is bolted upon the base, and the whole can be readily taken apart at any time for inspection. Reliability and economy in running are assured by the use of a positive feed of oil, the supply being controlled by a force pump, operated from an eccentric, which is controlled by the fly-wheel governor. The device is so adjusted that the feed of oil is always proportionate to the load. Under full load and low speed, the eccentric gives a long stroke to the plunger; as the load lightens and the speed rises, the stroke shortens and

the feed of oil is proportionately reduced. This is directly in line with the best steam-engine practice, in which the governor acts directly on the cut-off. Careful electrical tests have shown that the supply of oil is directly proportional to the work to be done; and as this regulation of the supply is automatic, a constant economy is assured. Particular care has been given to the design and construction of the pump. It is provided with steel ball valves, seating on phosphor bronze. The action is positive, and the many troubles which come from the use of spring-adjusted valves are quite avoided. The action of this mechanism is so sensitive that the interposition of a sheet of tissue paper between the eccentric lever and the plunger will produce instant increase in the speed of the engine. One of the sectional views shows the ingenious method of forced lubrication. A small pipe leads from the compression chamber to an oil tank attached to the cylinder, the top of the pipe terminating near the roof of the tank and clear of the surface of the oil, which is thus subjected to a pressure equal to that in the crank case. The oil is forced through two sight-feeds, one of which leads to the crank-pin, and the other to the cylinder and wrist-pin. The crank-pin oiler consists of a ring of channel section, which is set concentrically to the crank-shaft and eccentrically to the crank-pin, to which latter it is attached. A hole passes from the side of the oiling-ring into a hole bored through the crank-pin and communicating with oil channels in the wearing surface of the pin. As the engine revolves, centrifugal force retains the oil in the ring and forces it through the oil hole on to the wearing surfaces. The engine is adapted to use the ordinary grades of commercial kerosene; and the electrical tests, to which we have already referred, show that the larger engines of this type run on a consumption of somewhat less than one pint of oil per horse-power per hour, and that the smaller sizes show an economy that is proportionately good. The engine is manufactured by the Universal Kerosene Engine Company, 137 Liberty Street, New York.

FREIGHT AND PASSENGER ELEVATORS.

THE well known elevator firm, Morse, Williams & Company, Philadelphia, with branch offices in Boston, New York, Baltimore, and Atlanta, has added another to the list by opening an office at No. 1018 Penn Avenue, Pittsburgh, for the sale and erection of all classes of freight and passenger elevators. It will be in charge of a practical elevator man prepared to submit preliminary plans and specifications and furnish any information desired by architects, builders, or owners. This company has thirty years' experience and a record of 17,000 elevators sold. Some of its references in the "Pittsburg District" are: Kaufman Bros., Pittsburg; Keystone Warehouse Co., Buffalo; Buckingham Apartments, Pittsburg; Diamond Match Co., Barbertown, Ohio; Westinghouse Electric and Manufacturing Co., Pittsburg; New York and Pennsylvania Co., Johnsbury, belt and belt electric elevators. The firm

also manufactures and installs hand elevators and dumb waiters, and its machines are recognized as standard for safety, economy, efficiency, and durability. A Morse belt-power screw freight elevator is pictured in the accompanying illustration. It has a capacity of 1,000 pounds. The car is not over five feet square, fifteen feet lift; and includes all materials necessary to erect ready for belts, except lumber for



BELT POWER SCREW FREIGHT ELEVATOR.

the posts and wheel timbers. The elevator is equipped with a reliable safety clutch, automatic terminal stops, slack cable stops, and improved thrust bearings. The self-oiling pulleys run for eighteen months without renewal of the oil. The equipment also includes the celebrated Hindley Worm Gearing, as used on the United States battleships. Drawings are furnished, from which any competent mechanic can erect the elevator.

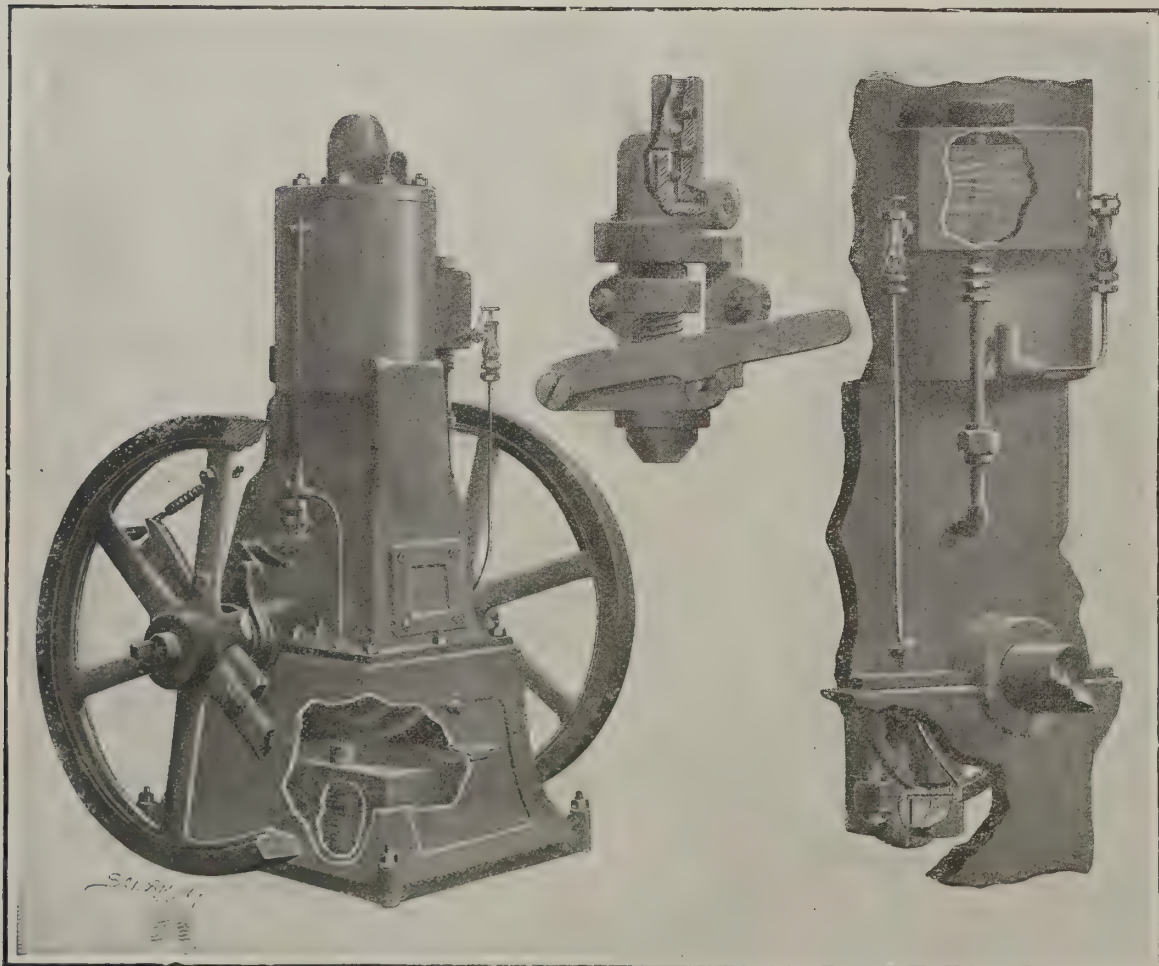
THE ROOFING TIN SITUATION.

SOME architects do not seem to realize how much harm is done by specifying a certain brand of building material and then adding the words "or equal." It is understood that this is due to the desire to avoid any suspicion of favoritism toward a certain particular brand. But there is evidence that this sentiment is rapidly being abandoned by the best architects everywhere, who do not hesitate to specify a well-known standard article alone and insist on its use, where they are satisfied of the superiority of that article. This is especially the case where a certain brand stands "head and shoulders" above its competitors, since to specify that brand "or equal" inevitably leads to the substitution of some cheaper article, probably an imitation lacking the quality of the genuine. A certain roofing tin company says: "We make what the public demands. If substitutions are allowed in place of our 'old style' brand because its cost is necessarily higher, its sale will simply be reduced. But as our works must be fully employed they will have to make the cheaper kinds the public demands. What is the result? We are not injured. Our profit is the same and inferior tin is used where the best should be. Competition in roofing tin has debased the standard of all kinds except the 'old style.' We will never change its quality—its sale will simply drop off."

CHEAP AND PRETTY COUNTRY HOUSES.

THE Daily Express, London, says that one of the chief difficulties in the way of getting the people "back to the land" is the lack of houses wherein to shelter them when they get there. Houses must be built which shall combine suitability with cheapness, and this is not easy. Several novel kinds of houses have been suggested, mostly by amateurs, but though very plausible on paper, they have had one defect—they could not be built. We have collected the opinions of one or two practical men, builders who have had special experience in making workmen's houses, and are enabled to give particulars of some cheap houses that would in most cases solve the difficulty. One firm, for instance, makes a specialty of wood and corrugated zinc dwellings. It informs us that it is prepared to erect a house suitable for a laborer and his wife and a small family in any part of the kingdom for £50 and upward. These houses are built of iron, lined with match-boarding, and with felt between the iron and the match-boarding to regulate the temperature.

There is a general idea that an iron building must of necessity be unsightly. We found this different at the yard. All the buildings were made of iron and wood. All were neat and sightly, and two were as picturesque as Swiss chalets, even as pretty as the dear old thatched cottages of bonny England. Inside the bungalows, little gabled cottages, gardeners' cottages, etc., they were as tight and cozy as any one could desire.



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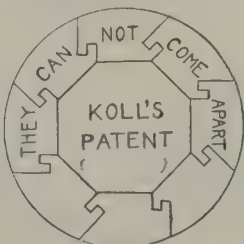
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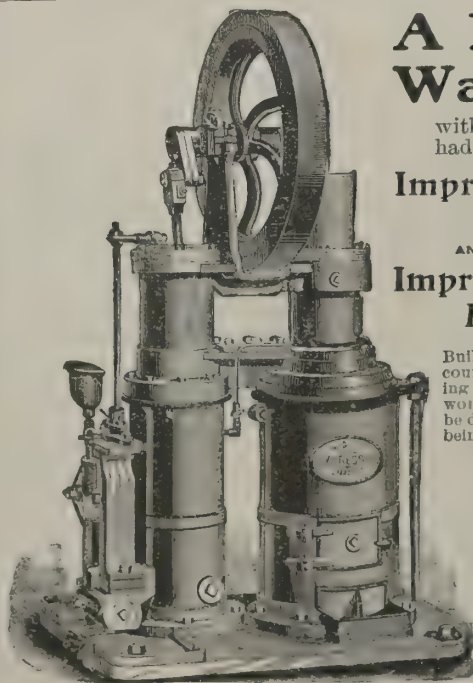
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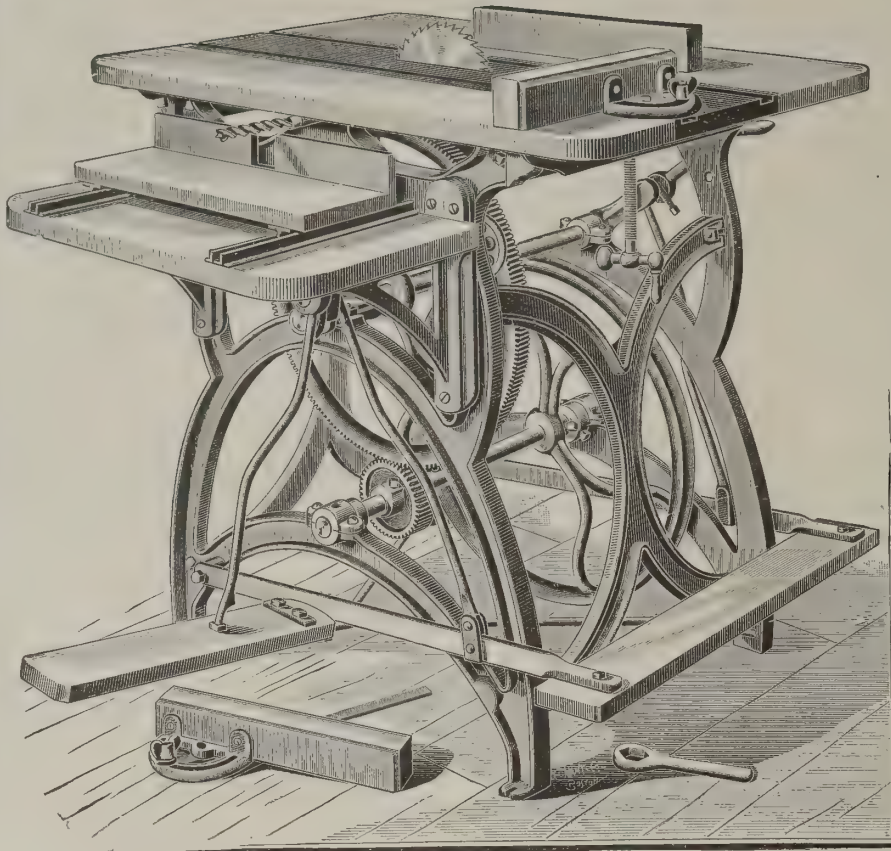
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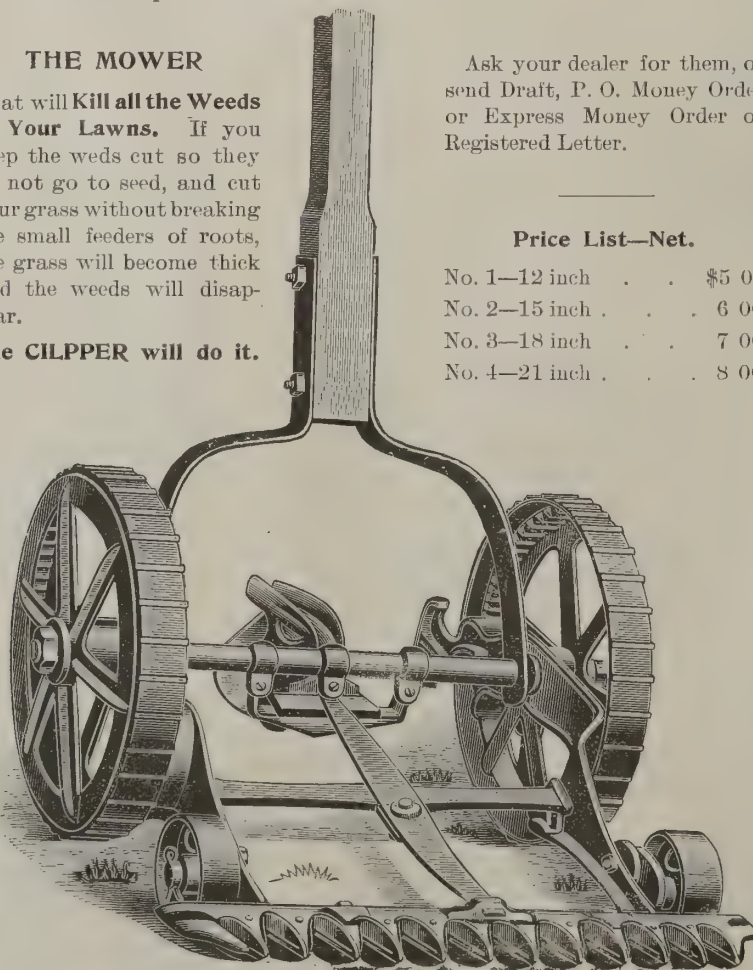
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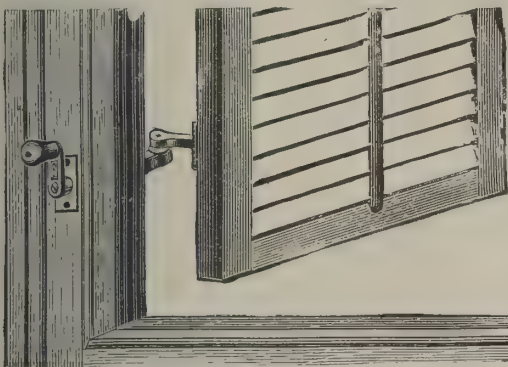
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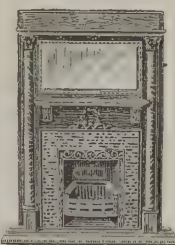
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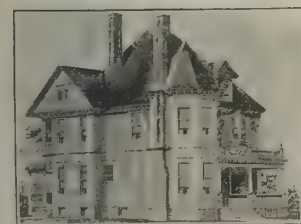
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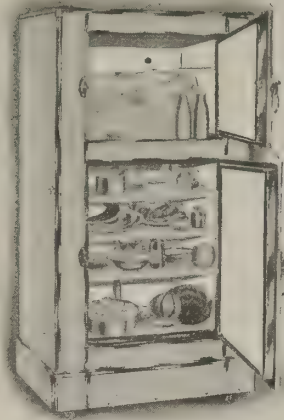
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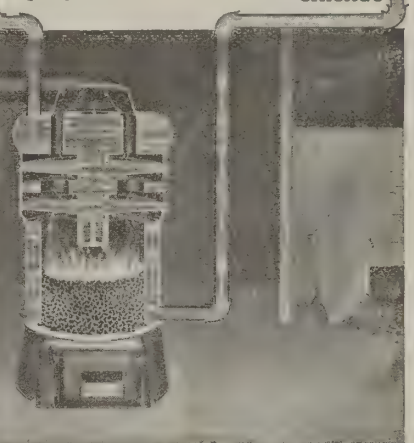
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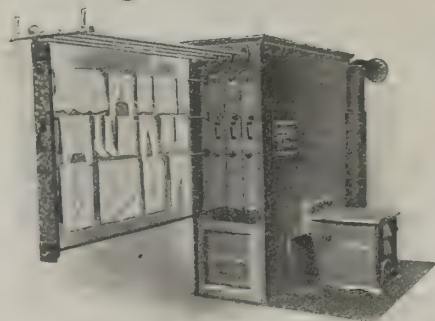
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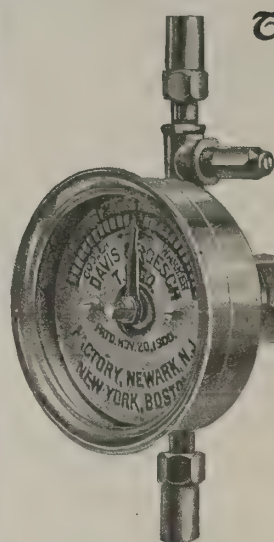
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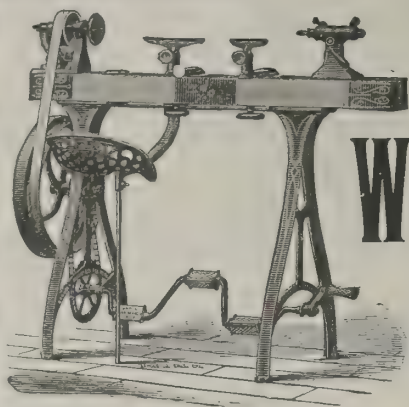
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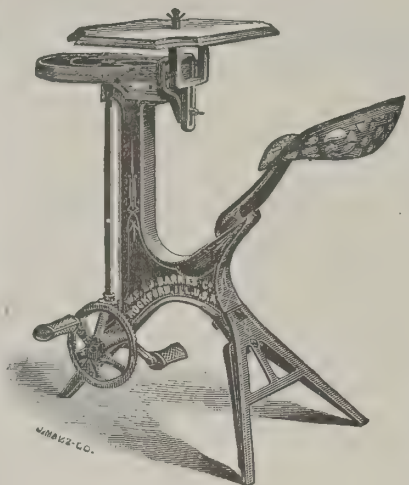
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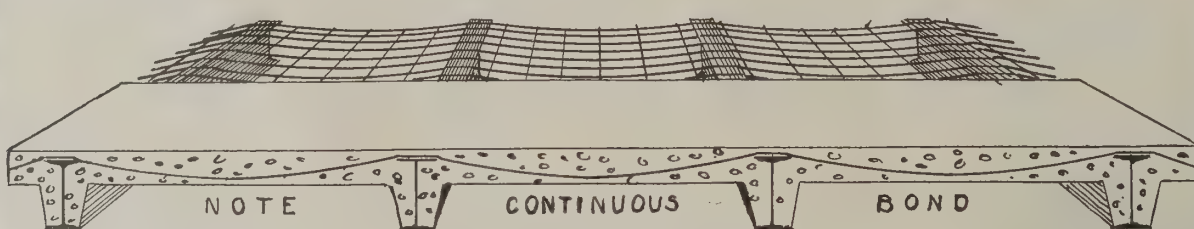
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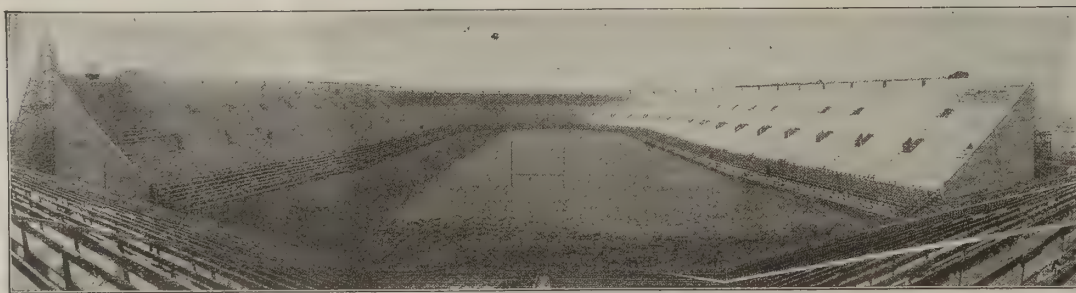


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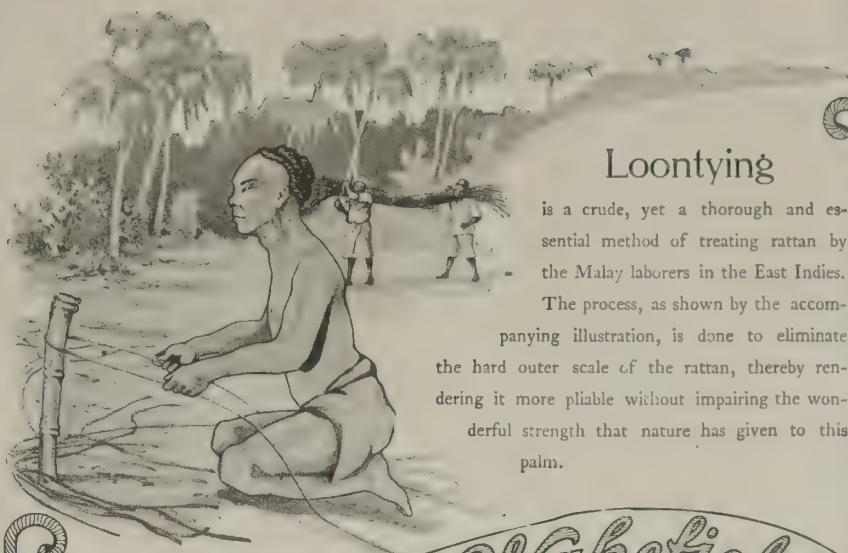
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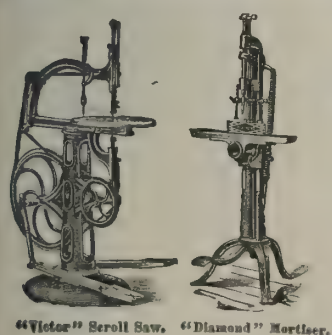
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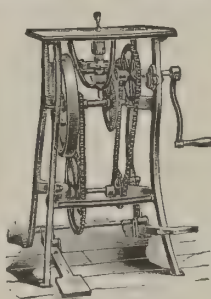
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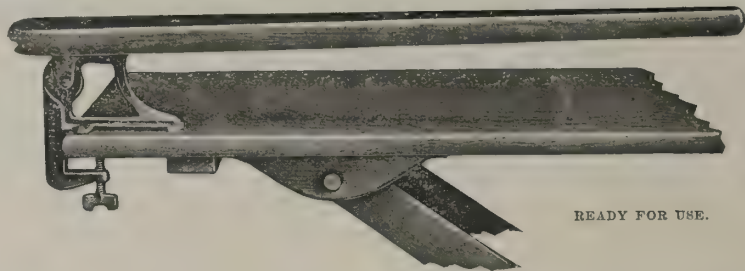
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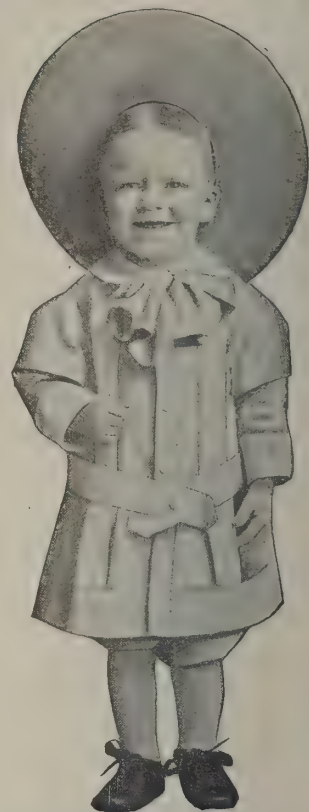
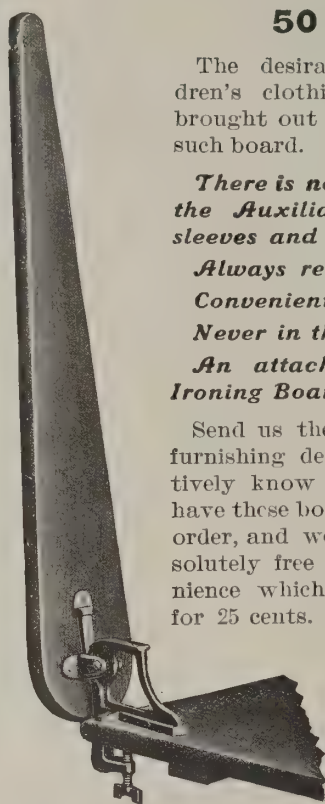
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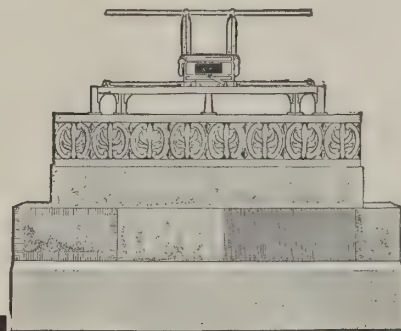
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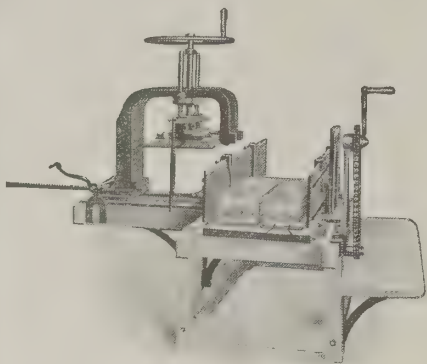
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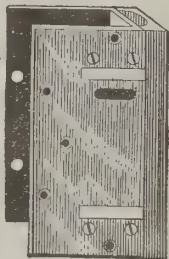
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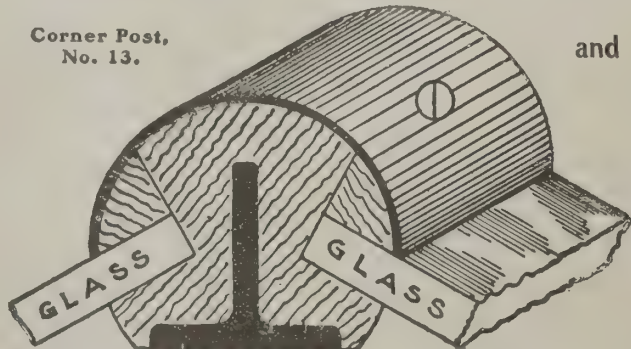
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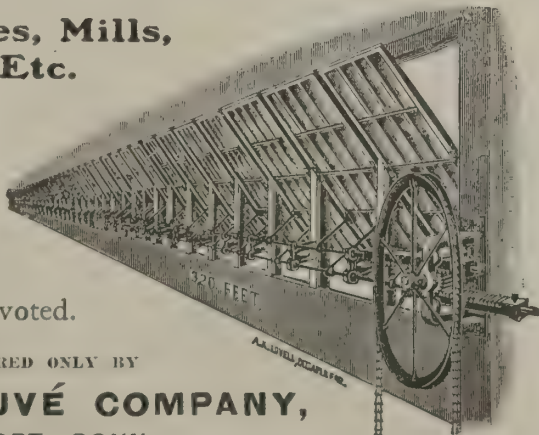
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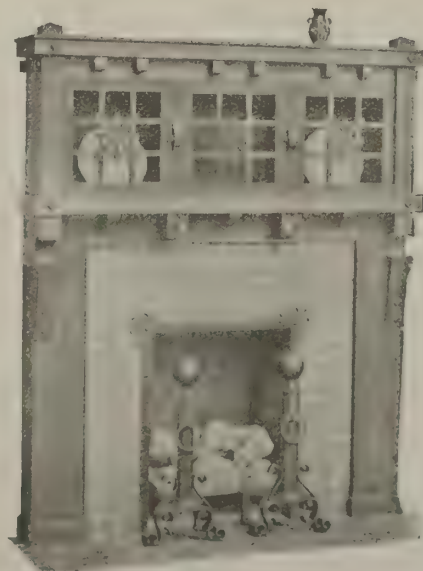


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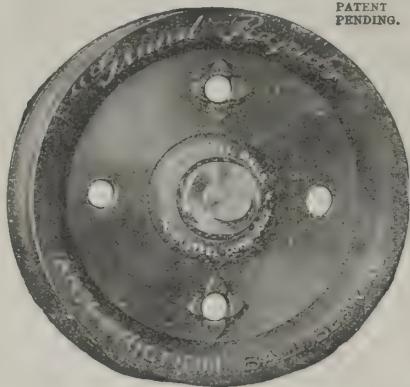
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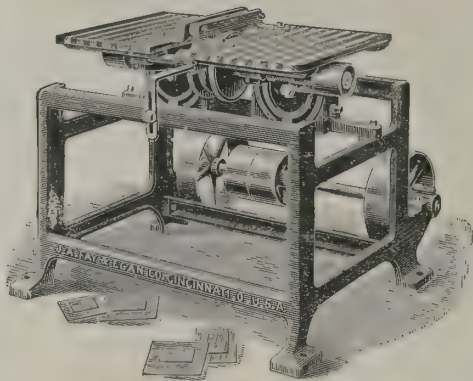
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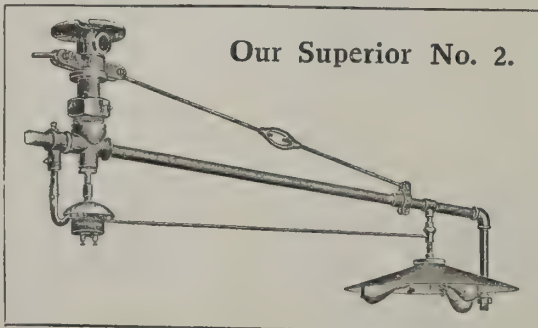
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That is to-day the height of the seat you know; the only change has been, through a long period of evolution, to the porcelain-bowl water closet you see in your bathroom to-day.

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This, when it is considered that the seat so long and universally used was wrong, is really a very strange fact.

The evolution from this vault system to the modern porcelain closet is remarkable, in that while the surroundings and appearance of the closet have greatly improved, especially from a sanitary point of view, this really limits the advance, the crude principles as first conceived being continued practically unchanged to the present day, even the height of the seat from the floor being carried down to us.

To the general public, interested only in the appearance of the plumbing fixtures as from time to time improved, it has probably never occurred to note that, notwithstanding these improvements, the shape and height of the water-closet bowl has undergone no change, and this fact becomes really remarkable when it is understood that the high, horizontal seat is not only uncomfortable, but physiologically incorrect.

To the physician and surgeon it is known that the position invariably assumed in the use of the ordinary seat is not the proper

position for the best results, as is evidenced by the use of the “pan” in hospital practice, which compels a “natural” position, but which, manifestly, is not adaptable to general use.

The need, then, of a closet bowl perfect from the view of the surgeon-physiologist as well as the sanitarian, and presenting a distinct advance in hygiene, is manifest, and this need the **NATURO** Bowl and Seat completely supply. The **NATURO** Bowl differs from the ordinary in that, instead of the high, horizontal seat so long in use, it has a low seat, sloping from front to rear, which makes a proper position

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The height and horizontal plane of the ordinary seat induce a most unnatural and cramped position, the body thrown forward, elbows on knees.

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This constriction invariably necessitates recourse sooner or later to a laxative, the need for which should not and would not be present were a natural position possible, such as the **NATURO** Bowl provides, instead of the cramped and improper position practically forced by the use of the ordinary bowl.

The **NATURO** Bowl, by reason of its height and shape, lower at rear than in front, and lower at its highest point than is the ordinary closet, makes a proper position

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than that now commonly used, and is also hygienically perfect. In a word, the **NATURO** Closet, as its name implies, makes possible

a “natural” position, without detracting in any way from the convenience and luxury of the modern bathroom, and this is of the utmost importance to the adult and to the young.

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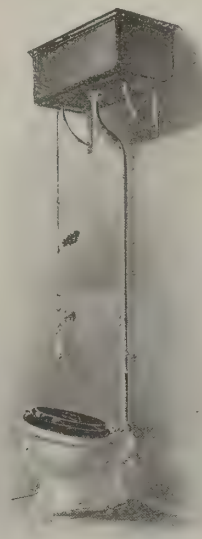
We only ask the consideration which the im-

portance of the subject justifies, and to this end invite correspondence from all who may not thoroughly grasp our argument for the importance of **NATURO** principles, and would suggest that the family physician be consulted in regard to same, believing that the conscientious response must be an unqualified indorsement of the principles involved in the **NATURO** Closet and Seat.

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SCIENTIFIC AMERICAN

Building Monthly.

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"GRAYEYRES," THE RESIDENCE OF ERNEST ALBERT, ESQ., ROCHELLE PARK, NEW ROCHELLE, N. Y.

No. 235

MAY, 1905

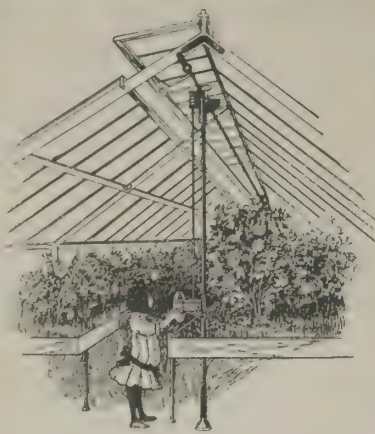
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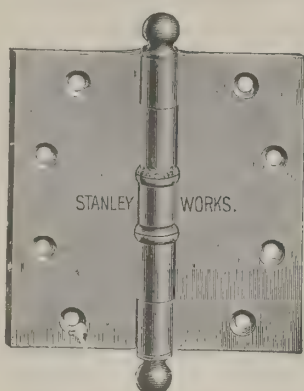
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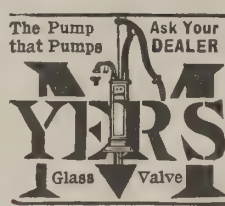
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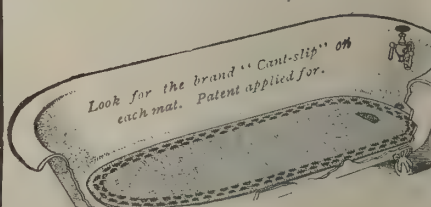
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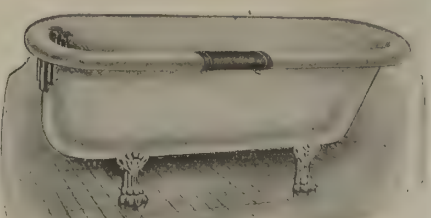


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THE PORTE-COCHÈRE.

"MARTIN HALL," THE HOUSE OF JAMES E. MARTIN, ESQ., GREAT NECK, LONG ISLAND, N. Y.—See page 91.
MESSRS. LITTLE AND O'CONNOR, ARCHITECTS.

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** The engravings presented in this issue are made from photographs taken specially for the SCIENTIFIC AMERICAN BUILDING MONTHLY.

MONTHLY COMMENT.

AN eloquent plea for the supremacy of the architect in all architectural undertakings was made by Mr. Edgar V. Seeler at the recent meeting of the American Institute of Architects. Few modern callings are so complicated and call for such varied knowledge as that of architecture. The engineer has to do with weighty problems, many of the highest complexity, but all of his work, even of the most difficult sort, is wholly within the strict lines of his profession—engineering. The architect is quite differently situated. His knowledge of architecture, his individual feeling for the beautiful in building, must be supplemented with constructive knowledge; in many instances the services of a constructive engineer are essential to the stability of his structure and the economical carrying out of his plans. A landscape architect may be needed for the treatment of the surrounding grounds; a sanitary specialist will be essential in problems involving special sanitary knowledge; a decorative artist may be called on for interior decoration; and so on through an extensive list, so numerous that the architect needs a strong hand and a firm mind to keep all his forces in control. Mr. Seeler has no doubt that the architect is the person to “boss” the job, and most architects will agree with him. All great undertakings require a responsible general to conduct them to a successful end, and this is as true of a great building enterprise as of the maneuvers of an army. The architect is surely the person to command these undertakings.

THE North American Review has been fortunate enough to secure a paper on architecture by M. Auguste Rodin; his special theme is “The Gothic in the Cathedrals and Churches of France,” but he touches on some of the vital principles of architecture in a

peculiarly illuminating and convincing way. No architect or sculptor, he says, has ever been able properly to restore a Gothic church or cathedral. The Italians, it is true, continue to repair their ancient monuments; but they only touch the parts that are falling to ruin; whereas when we repair we insist on restoring, and spoil the old in order to harmonize it with the new. Our French cathedrals are superior to the English and German ones by the greater sculptural expression displayed in them. In this respect they are second to nothing outside antique Greek architecture. The German Gothic is characteristically hard. The cathedrals at Strasburg and Cologne exhibit this defect, but, like that at Milan, more on the exterior than in the interior. The interior of the Cologne edifice is very fine, and yet the structure as a whole does not possess that supreme art for lack of which the largest cathedral appears smaller than a small church which has it. In one direction the Gothic sculptors surpass the Greek. The Greek temple is the same everywhere, and similarity, identity, is not a culminating quality of art. Life is made up of strength and grace most variously mingled, and the Gothic gives us this. The study of Gothic has unquestionably influenced my sculpture, giving me more flexibility, more depth, more life in my modeling. In order to reform our present stereotyped methods of art we want a second Renaissance. For a long time I hoped that in a near future this might be; but I have ceased hoping to-day. It would require a catastrophe capable of overturning and changing everything. So far, in our modern architecture I see nothing that gives encouragement. We have intelligent men who are sufficiently educated. They copy everything; they ferret out the style of Nineveh, as well as the styles of Louis XIV. and Louis XV.; but what they produce is without soul, without art and is insignificant. They repeat, but only as the parrot does. For long years we have done nothing but turn out from our colleges young men stuffed with useless scientific lumber; and they very quickly lose it all, and there is nothing to take its place.

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DESIGNING THE HOUSE.

THE designing of the house, the artistic expression of the varied problems presented by the owner, demanded by the site, necessitated by the cost, compelled by the size of the family to live in it, or the special tastes and peculiarities of the occupants, is the problem that belongs especially and exclusively to the architect. It is his business to satisfy the owner on these matters. He has been trained for that especial purpose, and he is engaged in the practise of his profession for no other reason.

Yet at this very important point his difficulties with the owner are very likely to reach an acute stage. Many prospective builders think they know what they want more than they actually do. Their real difficulty arises not from an inability to express themselves—they are often very wide awake in criticizing the aspects, failures, misfortunes and shortcomings of their neighbors' houses—but from the abnormal density of their ignorance of architectural matters. This ignorance is so profound as, at times, to be utterly and impenetrably opaque to the illumination of argument.

The client rarely asks himself what style shall be chosen for the proposed house, for in most cases he arrives at this conclusion without any discussion and by mere exercise of will power. His house must either be like Mr. A's, or something wholly different from Mr. B's; or else, more dreadful still—and there is nothing seriously dreadful in such sharpness of views—he will calmly present a porch from Mr. C's house, a bay window from Mr. D's, a chimney from Mr. E's, and expect his architect to compile a homogeneous whole out of a very varied series of discordant parts. In this latter case the conferences that ensue with the architect are likely to be so extremely painful to both parties that it will be well to close the door and leave them to fight it out themselves.

Then comes the demand for beauty. It is a natural and desirable request, creditable alike to the owner and the architect; public spirited, in fact, for every beautiful house is a public benefaction of a very enduring kind. The expression of a desire for a beautiful house, while very good in itself, the very best, indeed, is far from realizing that much desired goal. The trouble is that the average client—the man whose first practical experience with architecture begins with the planning and erection of his own house—has very few ideas as to what constitutes architectural beauty. He is so sure he knows—until he takes pencil and paper and tries to make a design himself. This failing, he is equally confident that, his architect being a man of ability, he has but to tell him what he wants to get it. The architect listens to his remarks, ponders over them, and submits a pre-

liminary sketch, in which, in many instances, the client fails to recognize the ideas he thought he had so clearly stated. It is no solution of the problem that this may be quite true, and that the architect's ideas of beauty in dwellings may be totally at variance with those harbored by the ingenious client.

A give and take policy, a deliberate getting together, a fuller acquaintanceship with what the client wants and what the architect can do, is the only solution to the difficulty. This means time, and time is money to both parties to the contest, but it is absolutely the only way out, and it is a way that must be traveled with the utmost good temper by all concerned, or there will be unending dissatisfaction and regret.

The lack of knowledge of what is good architecture on the part of the client is the chief source of the trouble, but it is not the whole trouble. Useful as architects are, skilled and trained in their art as many of them must be, it is nevertheless true that the architect as architect is often unable to acceptably translate the wishes and inclinations of the client into an agreeable combination of building materials. The final solution of such a difficulty must be left to the parties at issue; it is an awkward and difficult situation which the client must deal with as best he may.

Meanwhile the diffusion of architectural knowledge, of architectural appreciation, of the value of good architecture and acquaintanceship with its meaning, will help to diminish the frequency with which such difficulties will arise. Fortunately there is much more good architecture now on public view than has been visible for many years. The ordinary modern house has not yet attained the distinctive form and grace that gives beauty to almost every antique house, even of the plainest and most unpretentious description. Bad, foolish, ugly and absurd houses are still being built, and being built daily, to the confounding of the prophets of good things in modern work and the undoing of the art preachers who are continually measuring the standards of value. The harm done to such people is little enough at its most; but it is seriously disheartening and thoroughly regrettable that when so much good building is being done as at present more of it is not being done.

Still it is quite possible to travel through the better suburbs of our large cities and return refreshed at much of the building one may see in a day's ramble or a few hours' drive. And every good house means another better house. The progress may be slow, and it may proceed neither at the rate nor in the direction it might be hoped to proceed, but it is nevertheless real. The foundations of progress are very well laid; they are quite considerably distributed; and the tendencies toward good work are so pronounced that we must have more and more of it, not less and less.

People are, as a whole, quite generally alive to the value of living in a house of good appearance. We are more and more, as a people, awakening to the value of beautiful things. The beautiful house is an important element in our twentieth century renaissance of beauty. We have much to learn and much to do, but surely we are moving onward in the right direction!

The style of the house is only important in this matter in so far as it indicates the work that is being done. The limitations of the historic styles for modern houses were never better understood and recognized than at present. Many of them have, by common consent, been rejected, absolutely and completely. Others are no longer copied after, partly because of an alleged change in the public's taste, but more truly because of their incompatibility with modern conditions. Whatever the reason the elimination of variety in style from the architects' portfolios is an element of real strength and progress.

Architecture has flourished best when it has been kept within narrow limits of styles. The great styles were developed because men thought and worked in a single mode of architectural expression. The most hopeless period of American architecture was that in which every style was pressed into modern usage, and very beautiful landscapes were disfigured with hopelessly absurd buildings. Our buildings are not yet identical in style, but our architects are, more and more, keeping to single and individual lines of work, to their own great advantage as designers, and to the public's great advantage as responsible for admirable buildings.

Style—in its historical aspect—is, indeed, a very minor element in the progress of architecture. The chief thing is not the style, but the excellence of the structure under consideration. A historic style is not to be despised because it is historic and belongs to a past age or another civilization; the historic styles are the languages in which the architect must think and work. But it is more important that a house should be designed in a good way—that it be a good house—in itself—than that it illustrate any style, or set forth any particular vogue.

NOTABLE AMERICAN HOUSES*

BY BARR FERREE.

MARTIN HALL," THE HOUSE OF JAMES E. MARTIN, ESQ.,
GREAT NECK, N. Y.

THE house of Mr. James E. Martin, at Great Neck, Long Island, is very beautifully placed on a high cliff that rises abruptly above Little Neck Bay. The whole of this vicinity, as is much of the north shore of Long Island, is hilly, with the picturesque character of all rolling country. Mr. Martin was particularly fortunate in obtaining for his house an elevation that is quite marked, and which is so close to the water as to be, in an almost literal sense, directly above it.

The entrance grounds are maintained in beautiful order. A private road has, on the right, a flower garden enclosed behind a hedge. Just beyond it is the stable, an immense brick structure built in three parts, with connecting archways—a handsome building, perfectly appointed in every part. Beyond it is a

At the head of the drive is the house, but the ground on which it stands rises so abruptly that a turn is made before the porte-cochère is reached. It is a stately building, in black and red brick, with white terra cotta trimmings, a house of generous size, designed in a large way. The corners have channeled pilasters, and in the center of the entrance front is a porte-cochère, two stories in height, supported by Ionic columns. On the right is a long wing, containing the kitchen and service rooms, built out on the cliff on which the house stands, so that on the opposite side it has a lower story with a service entrance.

On the water front the whole of the first story is arcaded, except in the center, with porches within the arches; the walls are supported by piers, with columns at the entrances. In the center is a large portico, the full height of the house, with a rounded center. Arcaded porches are also built at each end, so that the house is very amply supplied with outdoor lounging places, most of which are included within the limits of the main walls.

The main entrance is by the door under the porte-

channeled columns behind it, with pilasters on the wall, uphold the ceiling. This is arranged in panels with molded beams and a central skylight. A fireplace is at the farther end on each side under the gallery. The room contains much furniture and many interesting pieces of bric-à-brac. Metal lamps hang from the ceiling in the upper gallery, which in itself is an upper room, beautifully furnished, and with many small pictures and other decorative objects on the walls.

The dining-room is on the right, and is two steps lower down than the great hall. The woodwork is white; the walls yellow. There is a high paneled wainscoting supporting curved shelves, on which are placed many fine specimens of blue and white porcelain. The ceiling is paneled, with white beams and yellow centers. It opens on to an enclosed porch, lined with brick, with an enclosed bay window beyond a triple archway, both portions forming a part of the series of porches on the water front of the house.

The billiard room is on the opposite side of the hall. The woodwork is once more white, but the walls



THE ROCKS—"GRAYEYRES," THE RESIDENCE OF ERNEST ALBERT, ESQ., ROCHELLE PARK, NEW ROCHELLE, N. Y.—See page 104.

very graceful water tower, also of brick, and crowned with a belvedere. On the left are conservatories. All these buildings stand in the midst of lawns kept in fine condition, and agreeably planted with shrubs and trees.

* Previous articles in this series: "BILTMORE," THE ESTATE OF GEORGE W. VANDERBILT, ESQ., Biltmore, N. C., February, 1903. "THE GARDEN AT 'GEORGIAN COURT,'" THE HOUSE OF GEORGE J. GOULD, ESQ., Lakewood, N. J., August, 1903. "HARBOR HILL," THE ESTATE OF CLARENCE H. MACKAY, ESQ., Roslyn, N. Y., September, 1903. "THE ORCHARD," THE COUNTRY SEAT OF JAMES LAWRENCE BREESE, ESQ., Southampton, N. Y., November, 1903. "THE RESIDENCE OF W. L. STOW, ESQ., Roslyn, N. Y., December, 1904. "WHITE HALL," THE HOUSE OF HENRY M. FLAGLER, ESQ., Palm Beach, Fla., January, 1904. "FAULKNER FARMS," THE ESTATE OF MRS. CHARLES F. SPRAGUE, Brookline, Mass., March, 1904. "THE HOUSE OF E. J. BERWIND, ESQ., Newport, R. I., April, 1904. "GREY CRAIG," THE ESTATE OF J. MITCHELL CLARK, ESQ., Newport, R. I., May, 1904. "BLAIRSDEN," THE ESTATE OF C. LEYARD BLAIR, ESQ., Bernardsville, N. J., June, 1904. "KILDYSART," THE COUNTRY SEAT OF DANIEL O'DAY, ESQ., Deal Beach, N. J., July, 1904. "THE ESTATE OF HENRY W. POOR, ESQ., Tuxedo, N. Y., August, 1904. "THE COUNTRY SEAT OF STANFORD WHITE, ESQ., St. James, L. I., N. Y., September, 1904. "DREAMWOLD," THE ESTATE OF THOMAS W. LAWSON, ESQ., Egypt, Mass., October, 1904. "THE HOUSE OF HERMAN E. DURYEA, ESQ., Old Westbury, N. Y., November, 1904. "THE HOUSE OF MRS. RICHARD GAMBRILL, Newport, R. I., December, 1904. "MRS. A. CANS CANFIELD'S HOUSE, Roslyn, N. Y., January, 1905. "THE HOUSE OF OGDEN MILLS, ESQ., Staatsburg, N. Y., February, 1905. "BELLEFONTAINE," ESTATE OF GRAVYD FORSTER, ESQ., Lenox, Mass., March, 1905. "THE HOUSE OF LLOYD BRYCE, Roslyn, N. Y., April, 1905.

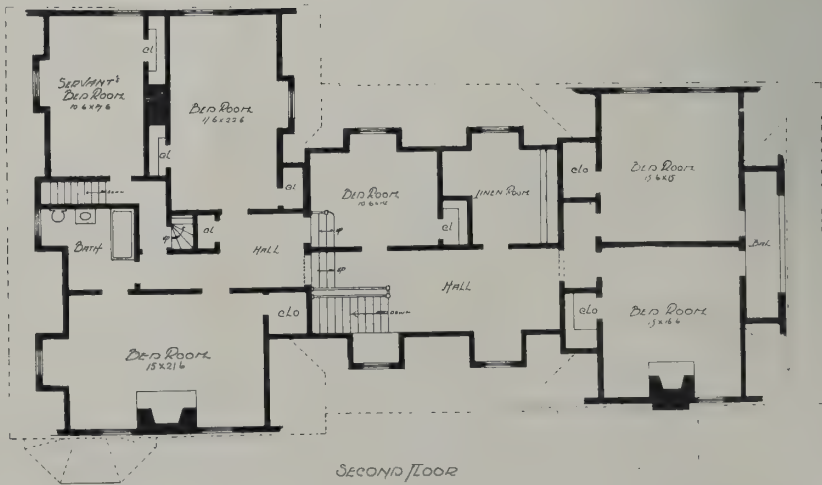
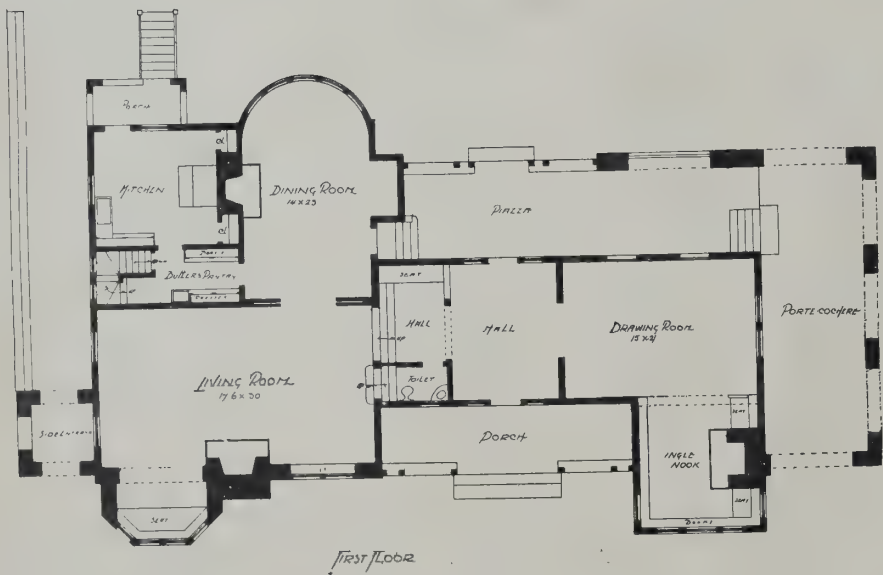
cochère. It opens into a vestibule-like passage, which, however, is not shut off from the interior; on each side is a passage leading to a small room. Directly in face is the great central hall, which serves both as living room and reception room. A short passage, with niches on either side, connects the vestibule with it.

The hall is very large, two stories in height, and entirely surrounded with a gallery supported on arches. The stairs rise in pleasant curves on either side of the entrance doorway and form one of the most striking features of this great room. It is an apartment dominated, in a very unusual degree, by the very extensive woodwork that enters into its construction. This is painted white, and the walls and panels of the ceiling are red. Round columns support the arches of the lower story, which have broad molded faces and ornamented keystones or cartouches. Similar arches are applied to the wall beneath the gallery, and the doors are surmounted with broken curved pediments. The gallery round the upper floor has a beautiful spindle rail, with slightly projecting balconies in the center of three sides, and

are green, and the ceiling has but three large panels instead of the many small ones which characterize the other rooms. The cue racks form a portion of the permanent fixtures, and are handsomely designed with broken pediments. The porch without looks on to a small formal garden in the center of the lawn, containing a sundial and two large marble vases.

The house stands so close to the edge of the cliff that there is no space for a garden; but the broad steps of the central portico descend on to a green slope, upheld by a wall supporting a balustrade. This is interrupted in the center by steps, at the base of which stand marble lions. The terrace wall and balustrade are continued at right angles to the end of the dining room. The water of the bay is almost directly below, so sheer is the cliff and so abrupt the descent. The view is very lovely, a quiet, restful scene of green meadow and pleasant woods. Quite in the distance are the gray walls of Fort Schuyler, across Long Island Sound.

NOTE.—The illustrations of Mr. James E. Martin's house have been taken from "American Estates and Gardens," Munn & Co., publishers.



"GRAYEYRES," THE RESIDENCE OF ERNEST ALBERT, ESQ., ROCHELLE PARK, NEW ROCHELLE, N. Y.—See page 104.
MR. WILSON EYRE, ARCHITECT.



THE DRAWING-ROOM.



THE LIVING-ROOM.

"GRAYEYRES," THE RESIDENCE OF ERNEST ALBERT, ESQ., ROCHELLE PARK, NEW ROCHELLE, N. Y.—See page 104.
MR. WILSON EYRE, ARCHITECT.



THE DINING-ROOM.



THE LIVING-ROOM.

THE HOUSE OF JOHN P. BENSON, ESQ., FLUSHING, LONG ISLAND, N. Y.—See page 105.

MR. JOHN P. BENSON, ARCHITECT.



THE FORMAL GARDEN.



THE SHORE FRONT.

"MARTIN HALL," THE HOUSE OF JAMES E. MARTIN, ESQ., GREAT NECK, LONG ISLAND, N. Y.—See page 91.
MESSRS. LITTLE AND O'CONNOR, ARCHITECTS.



THE STAIRCASE.



THE DINING-ROOM.

"MARTIN HALL," THE HOUSE OF JAMES E. MARTIN, ESQ., GREAT NECK, LONG ISLAND, N. Y.—See page 91.

MESSRS. LITTLE AND O'CONNOR, ARCHITECTS.

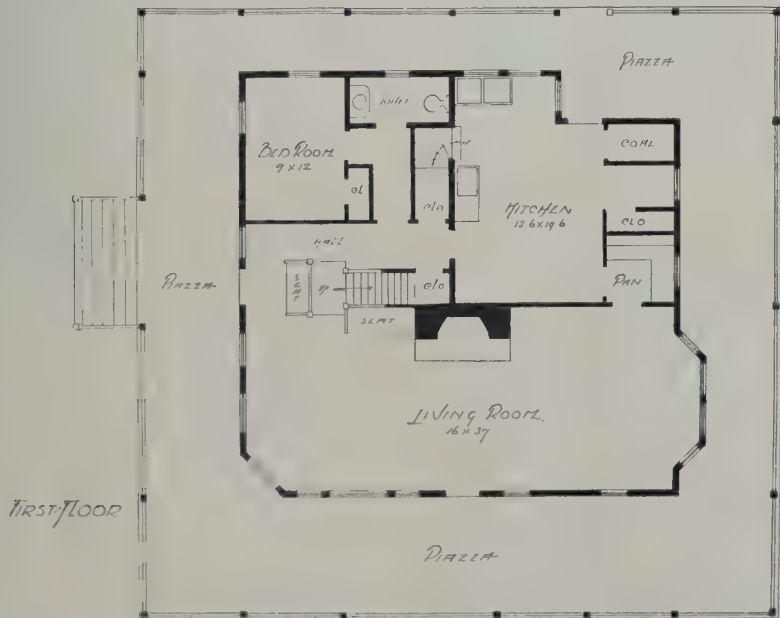


THE CONSERVATORY.



THE GREAT HALL.

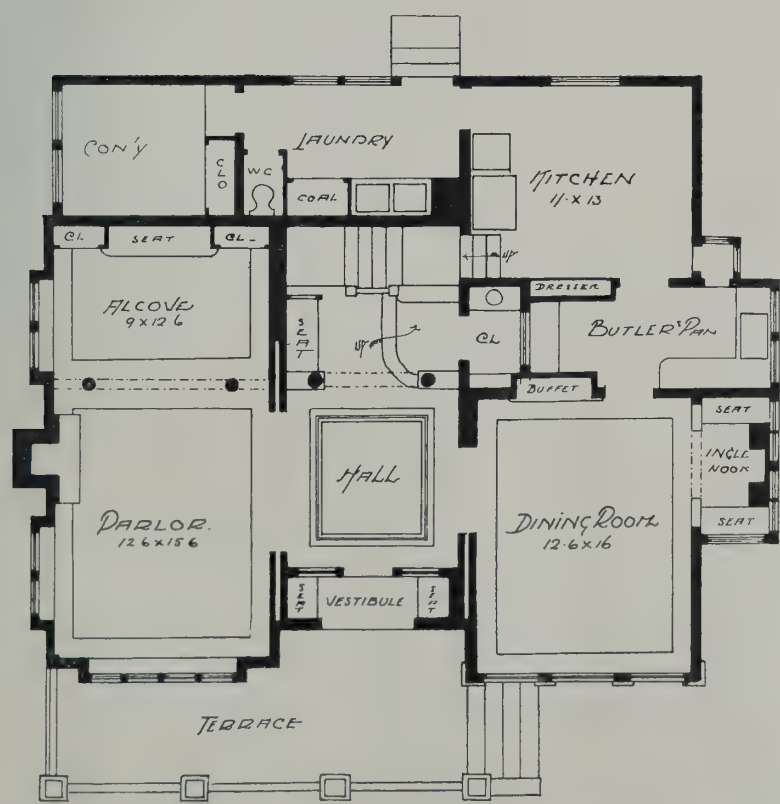
"MARTIN HALL," THE HOUSE OF JAMES E. MARTIN, ESQ., GREAT NECK, LONG ISLAND, N. Y.—See page 91.
MESSRS. LITTLE AND O'CONNOR, ARCHITECTS.



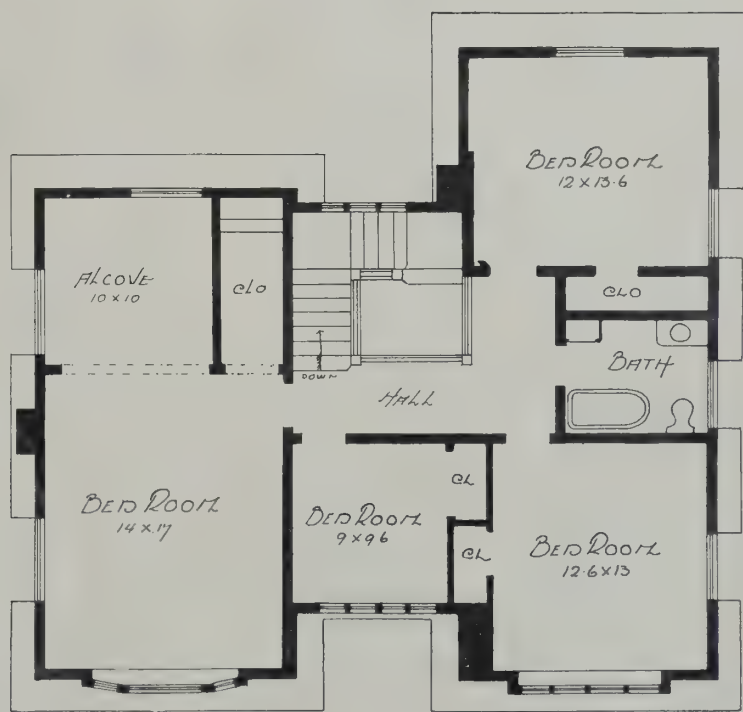
A SUMMER COTTAGE AT DELANO PARK, CAPE ELIZABETH, MAINE.—See page 106.
MR. JOHN CALVIN STEVENS, ARCHITECT.



RESIDENCE OF MRS. LEE JORDAN, MACON, GA.—See page 104.
MR. WILLIAM T. DOWNING, ARCHITECT.



FIRST FLOOR

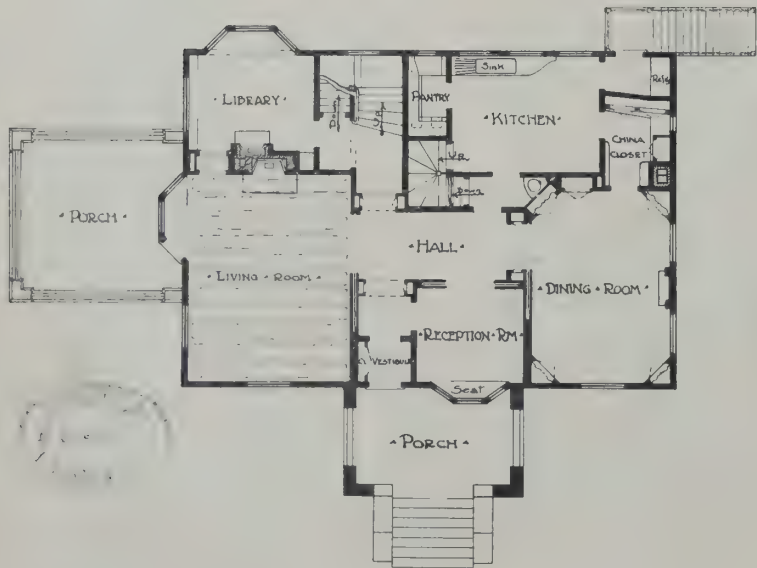


SECOND FLOOR

A HALF-TIMBERED HOUSE AT OAKLAND, CAL.—See page 104.
MR. C. W. McCALL, ARCHITECT.



Second Floor.



First Floor.



RECEPTION-ROOM.

HOUSE AT NEWTON CENTRE, MASS.—See page 104.
MESSRS. COOLIDGE AND CARLSON, ARCHITECTS.



THE LIVING-ROOM.



THE DINING-ROOM.

HOUSE AT NEWTON CENTRE, MASS.—See page 104.

MESSRS. COOLIDGE & CARLSON, ARCHITECTS.

"GRAYEYRES," THE RESIDENCE OF ERNEST ALBERT, ESQ., ROCHELLE PARK, NEW ROCHELLE, N. Y.

BY FRANCIS DURANDO NICHOLS.

THE approach is the introduction to every estate, and, being the first impression, is necessarily made attractive, and is, therefore, not easily brushed from the mind by the attractions later discovered, and so it is with the estate of which I am treating. After passing through an imposing gateway, with massive stone columns at either side which are surmounted with wrought iron lanterns, one finds himself within the confines of Rochelle Park, from which point after passing the gateway there is found one succession of landscape pictures, greeting the eye on every hand as one passes along a short stretch, and approaches the intersection of two roads, at the junction of which there is placed a merry little Cupid, with his right hand raised to the sky, and from which a fountain of water plays happily into the basin below, splashing over the masses of iris and other growing plants which surround it. Passing along to the right of the fountain, and skirting the drive, with the plaza on the one hand, which is well pierced by its many statues, and on the other by a group of picturesque and interesting villas, well situated in an unbroken woodland which extends from the entrance of the Park, is the sweeping roadway which lands one under the porte-cochère of "Grayeyres," the residence of Ernest Albert, Esq., designed by Mr. Wilson Eyre, of Philadelphia, Pa., and which is considered to be one of his most interesting works. The site is most unique, and its outcropping rock is used with agreeable effect to enhance the value of its rusticity.

The illustrations on pages 91, 92, and 93 show much of the rocky lawn and terraces, and give a fair idea of the dwelling itself, which is particularly fortunate in its share of being a most interesting architectural ensemble, with its low outlines, its stone arches forming a porte-cochère, and its steep roof seen under shady trees.

The whole building sweeps over a rock-ledge, while the cellar bottom and the floor lines are on different levels in order to conform with the ground site. The underpinning and some parts of the first story are built of rock-faced field stone, which are very beautiful in their coloring, and which are also covered with lichens. The remainder of the exterior walls are covered with Carolina hewn shingles, which are left to weather stain a natural silvery gray, while the trimmings are painted a dark bottle green. The roof is also covered with shingles and is treated in a similar manner. Crossing the terrace and passing up a short flight of steps, one finds himself on the porch, from which a broad door swings into the entrance hall. This hall is trimmed with black oak, and it harmonizes very effectively with the Pompeian red covering of the walls, which is placed above the paneled wainscoting, and is finished with a wooden cornice. The nook, with its paneled seat, forms an attractive retreat, and is well screened from view. To the left of the hall a broad opening forms the entrance to the drawing room, which is an attractive apartment. The woodwork is treated with old ivory white paint, the walls are handsomely decorated, and the whole is finished with a frieze of panels showing Watteau characters. The inglenook is separated from the drawing-room by an archway, and is provided with an open fireplace, which is furnished with facings of pink Sienna marble, a hearth of tiles, and a mantel of unusual proportions, and of Colonial style with excellent detail. Seats are placed on either side of the fireplace.

Retracing one's steps, and passing through the hall and the inglenook, a short flight of steps lands one in the living-room, which is the most important room in the house. This room is very artistically treated in a soft, brownish, olive color. The floor beams are dressed and exposed to view, and these, together with the walls, are treated in a similar manner. The fireplace is an attractive feature with its unglazed green tiled facings and hearth and its massive mantel with Dutch hood. The bay window, which is thrown out at the front, has a paneled seat. From this living-room the stairs to the second floor rise in an interesting manner, for the feature is quite unusual for a house of this proportion, and is a very admirable one, for the reason that it precludes any possibility of the stairs being seen upon entering the house, and confines them to the uses of the family and their intimates.

The dining-room, which opens from this living-room, is treated with an old golden tone, and the walls are paneled from the floor to the ceiling; the latter is treated likewise. The fireplace is furnished with a tiled facing and hearth, and a mantel.

The kitchen and its dependencies are trimmed with yellow pine, and are fitted with all the best modern conveniences. A private stairway rises up to the second floor, where the servants' quarters are placed over the kitchen, so that they are isolated from the living quarters of the family. The remainder of the second floor is devoted to the family and guests' rooms, and comprises five bedrooms, a large linen room, and a bathroom, all opening from the hall. This floor is treated with ivory white paint in a delicate manner, and the walls of each room are decorated with an artistic effect. The bathroom is treated throughout with white enamel paint, and it contains porcelain fixtures and exposed nickelplated plumbing. The attic provides ample storage space. The cellar contains the heating apparatus, fuel rooms, cold storage room, etc.



A COLONIAL MANTEL.

Mr. D. Knickerbacker Boyd, Architect, Philadelphia, Pa.

The enclosed piazza at the rear of the house forms a very attractive feature, for it gives an open room in summer and an enclosed one in winter. It has a floor laid with brick in herringbone pattern, and is handsomely furnished in a suitable and comfortable manner and appropriate for an outdoor living-room.

Mr. Wilson Eyre, architect, 927 Chestnut Street, Philadelphia, Pa.

RESIDENCE OF MRS. LEE JORDAN, MACON, GA.

THE residence of Mrs. Lee Jordan, at Macon, Ga., is the subject of the illustrations on page 100. The building is designed in the Colonial style of the Georgian period. It has a flat roof, which overhangs and is supported on fluted columns with Corinthian capitals, the whole being surmounted with a handsomely carved frieze. The house is constructed of stucco and is tinted with a soft gray water-wash; the remainder of the trim and columns is treated likewise. The approach to the house, showing a broad flight of steps, is built of a stucco composition.

The entrance to the main hall is reached through a vestibule. This hall, square in form, is built with columns rising to the ceiling and supporting arches.

These columns, arches and walls are of composition, built in the form of stone. The balustrade to the steps is of a similar composition. The fireplace has a mosaic tile facing and hearth, which is built in under the landing to the staircase; on either side of which are paneled seats. The parlors are treated handsomely with old ivory-white enamel. Each is separated, one from the other, by columns of the Ionic order, supporting an archway. They have open fireplaces furnished with tiled facings and hearth, and mantel. The sitting-room is trimmed with mahogany, and has also an open fireplace and mantel. The rear hall, of large dimensions, is provided with an open staircase.

The dining-room is trimmed with oak and has a paneled wainscot and ceiling beams. A very handsome carved buffet is built in. The loggia off the dining-room is a good feature. The kitchen and pantry are fitted up with all the best modern conveniences. The second story contains six bedrooms, maid's room, and three bathrooms, the latter furnished with porcelain fixtures and nickelplated exposed plumbing. The cellar contains the laundry, heating apparatus, fuel rooms, etc. The servant quarters are placed in a building adjoining the house.

Mr. William T. Downing, architect, Atlanta, Ga.

A HALF-TIMBERED HOUSE, OAKLAND, CAL.

THE house, of Elizabethan character, which is presented on page 101, was erected for G. W. Hatch, Esq., at Oakland, Cal. The exterior has been well executed; the balustrade at the front terrace, the carefully studied arch over the doorway, and the gable ends, together with the numerous latticed and leaded windows, give an interesting tone to the whole architectural scheme. The house from the grade to the top of the first story is covered with shingles, left in their natural state. The second and third stories are beamed, forming panels, which are filled in with stucco; these beams and trimmings are painted a bottle green. The roof is covered with shingles and is stained a moss green, in a deep tone.

The interior arrangement has received an equal amount of study. The open vestibule, with its seats, forms an attractive entrance to the hall; the latter trimmed with pine and stained and finished in Flemish brown. There are a paneled wainscoting and a wooden cornice, and a staircase separated from the hall proper by an archway, which is supported on columns resting on paneled pedestals. This staircase is of ornamental character, and is of the Elizabethan style, with a paneled seat at the side.

The parlor and alcove form one great living-room, for the only separation between the two is an archway supported on columns. There are three bay windows, with flower shelves, bookcases, paneled seat, and an open fireplace, furnished with tiled facings and hearth, and a mantel of English design with paneled over-mantel.

The dining-room is treated the same as the hall, and has a paneled wainscoting and a wooden cornice. The inglenook contains an open fireplace with tiled facings, Welsh tiled hearth, and a mantel, and on either side of which there are paneled seats. The butler's pantry forms the separation between the dining-room and

kitchen, and it is fitted with sink, drawers, dressers, and cupboards. The kitchen and its dependencies, including the laundry, are fitted with all the best modern conveniences.

The second story is treated with ivory-white paint, and contains four bedrooms and bathroom. One of the bedrooms has an alcove for the bed, and a large well-fitted closet. The bathroom is furnished with porcelain fixtures and exposed nickelplated plumbing. The third story contains the servant quarters and ample storage space. A cemented cellar contains the heating apparatus, fuel rooms, cold storage, etc.

Cost, \$4,750 complete.

Mr. C. W. McCall, architect, Oakland, Cal.

HOUSE AT NEWTON CENTRE, MASS.

ON pages 102 and 103 will be found illustrations of a house recently erected at Newton Centre, Mass. It has Dutch gable ends, and is constructed with a stucco exterior, soft gray in color, with white trimmings and green blinds, and a roof of red Celadon tile.

The hall is paneled with cypress to the height of eight feet, and the walls above are covered with old green burlap, and the whole finished with a wooden

cornice. The entrance at the front is through a paneled hall, and it has an ornamental stairway placed in the stair-hall, which is separated from the main hall by a paneled arch.

The reception-room, to the right of the entrance, is finished in ebony, and this woodwork forms the frame for the wall tapestries, with which the walls are covered, and which are very beautiful in themselves. The living-room is finished in mahogany, and has a paneled wainscoting four feet in height, and above which the walls are covered with an imitation of old leather, while the ceiling is beamed, forming deep panels, which are covered with old leather of a golden brown. The lighting fixtures are of hammered iron, finished like old armor. The fireplace has marble facing, a tiled hearth, and a mantel of Colonial style, with overmantel and mirror.

The library is trimmed with cypress, and finished in forest green. It has a bookcase built in, an open

for a children's playroom. The cemented cellar contains the heating apparatus, fuel rooms, and a laundry.

Messrs. Coolidge and Carlson, architects, 22 Congress Street, Boston, Mass.

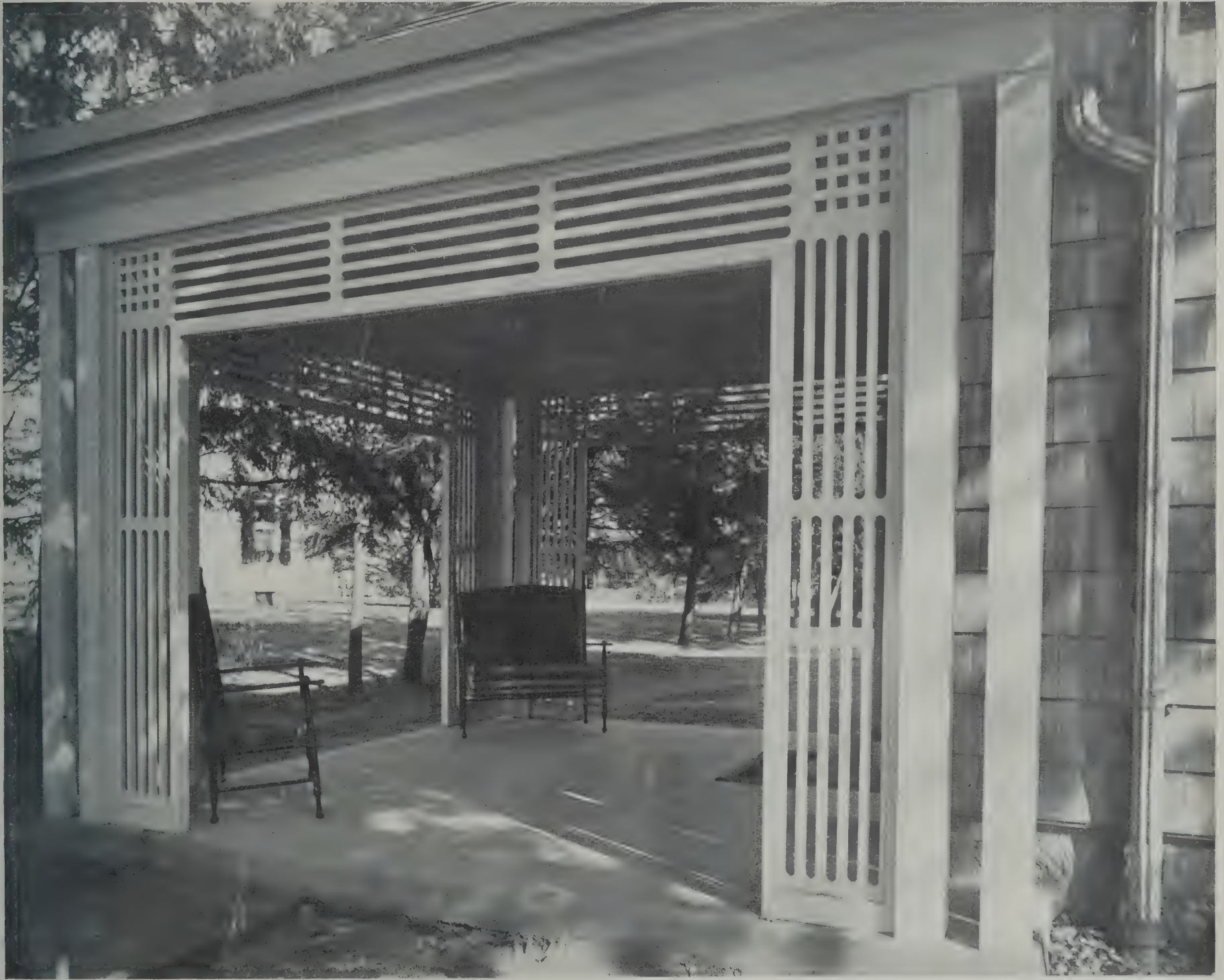
**THE HOUSE OF JOHN P. BENSON, ESQ., "FOX LANE,"
FLUSHING, LONG ISLAND, N. Y.**

THE house illustrated on pages 94, 95, and below was erected for John P. Benson, Esq., at "Fox Lane," Flushing, Long Island. It is designed in a quaint manner, with a graceful sweeping roof surmounting the whole, which presents the effect of a one and a half story house, while in reality it has two and a half stories. The underpinning is built of stone, and the superstructure is covered with white cedar shingles on the exterior, which are left to weather finish. The trimmings are painted white and the blinds apple green. The roof is also covered with white cedar shingles. The entrance porch is quite interesting

The dining-room is recessed into a large alcove, and is separated from the living-room by a broad archway, which is cased with chestnut. The alcove at the side of the room forms a place for the side table. The end of the room is octagonal in form, and the door at the right opens into a lobby, forming an entrance to the toilet-room, and also to the rear porch; the opposite door opens into a large butler's pantry, fitted with sink, drawers, dressers, etc.

The kitchen is well arranged, and has a pot closet, large dresser, range and hearth, sink, and an ample lobby, large enough to admit ice-box. One of the most unusual features introduced in this plan is, that the two servants' rooms are placed on this floor and off the kitchen; by this arrangement it gives to the owner and his family the privacy of the remainder of the house.

The second story contains four bedrooms, linen closet, and a bathroom, with yellow painted walls,



THE LATTICED PORCH—HOUSE OF JOHN P. BENSON, ESQ., FLUSHING, LONG ISLAND, N. Y.

fireplace and mantel, and a vaulted ceiling, which is finished with a decorative painting.

The dining-room is trimmed with North Carolina pine, stained to a dull woody brown. It has a paneled wainscoting, eight feet in height, finished with a plate-rack. The frieze above this is covered with Japanese tea-paper, mounted on burlap, and the whole finished with a wood cornice. There is a buffet built in, and also a china closet in each corner of the room, which are provided with cupboards and drawers below the counter shelf, and closets above furnished with glass doors. The fireplace has tiled facings and hearth, and a mantel. The china closet and kitchen and its dependencies are fitted with all the best modern conveniences.

The second floor contains four bedrooms, sewing-room, and bathroom, and also the servant room and bath, which have a private stairway to the first story. The bathrooms are fitted with porcelain fixtures and exposed nickel-plated plumbing. The second floor contains one large room 25 by 50 feet, which is utilized

with its one step rise from the grade, its cement floor, and its enclosure with trellis work, supporting the roof which swings off from the roof of the main house.

A rise of three steps leads to a square vestibule, provided with a coat closet at one side, and at the opposite a stairway, which is boxed and reaches to the second story. Opposite the entrance door, another door opens into the living-room, which extends across the whole front of the house, and forms the key to the entire scheme. This living-room, as well as the entire house, is trimmed with chestnut, and stained a soft brown color. The ceiling is open to the roof. There is a large open fireplace built of Harvard brick, which rises to the level of the second floor, over which there is a balcony in the second story, finished with a wrought-iron railing of handsome design. This fireplace, laid with black headers and in Flemish bond, has a shelf of two inch chestnut, supported on brick corbels. The panel in the overmantel is filled in with a painting.

porcelain fixtures, and exposed nickel-plated plumbing. The attic contains a large playroom and ample storage space for trunks, etc. The cellar, cemented, contains a heating apparatus, fuel room, laundry, etc. The walls throughout are plastered and troweled on with a rough finish. The floors are laid double, and are of cone-grained North Carolina pine, except the kitchen floor, which is of maple.

Mr. John P. Benson, architect, Windsor Arcade, Fifth Avenue and Forty-seventh Street, New York.

PIAZZA OUTFIT.

THE piazza outfits are, says an exchange, if possible, even prettier than they were last year, and the comfortable upholstered cane sofas and armchairs, the Japanese rugs and screens, tables and the rest of the modern innovations make a family gathering place for those so fortunate as to possess a piazza, and tempt those who have not to attempt a roof garden to have an excuse for purchasing the charming furniture.



The Household

THE HOUSEHOLD PICTURES.

PICTURES are among the most charming and necessary of household furnishings. Their charm, when good, is undeniable; their necessity is quite as patent, for they decorate and enliven dull walls, they bring rare beauty into a house, and, when well chosen, they are enormously effective as furnishings, as necessary, indeed, to a room, as tables and chairs. Pictures must, however, be well chosen and be good in themselves, or they will entirely fail in giving satisfactory results or being the adornment it is often hoped they will be. A picture should never be used for the single reason that it happens to be in hand. It must have merit in itself, have merit in its medium, or it should be thrust out. An engraving, for example, should be a good engraving as an engraving, although the subject itself may have interest. A photograph should be a good photograph, and a bad photograph of a good subject should be instantly rejected. The same rule applies to paintings, although the techniques of painting are so little understood and valued by the average amateur that the untrained eye is not able to judge them readily and properly. In selecting pictures a very good rule is to avoid the hackneyed, even if they have supreme merit as pictures, which is often the case. A work of art loses merit when it is found reproduced a hundred times in as many parlors. The number of good pictures in the world—pictures worthy of reproduction and worthy of admiration—is astonishingly large, and there are many excellent subjects which have not yet been exploited to the fulness that their merits entitle them. It is reproductions of these pictures that the picture buyer should search for. They will give great satisfaction, and, in not a few instances, confer distinction and individuality upon the rooms in which they are placed.

PICTURE FRAMING.

A DAILY paper has given some advice on the subject of framing pictures that is worth reproduction. In the ordinary living-room, which has no pretensions toward being a period room, it is safe to have the majority of the frames of a dark wood brown, a color that will harmonize with almost any furniture, as well as being suitable for almost any etching, photogravure or water color. For a water color bright in its coloring a simple gold frame is to be preferred—a narrow one of plain, dull gold, and a mat of white or gold. White and gold frames have long since had their day, and are little seen in the shops. They do not wear well.

Engravings and etchings are often better framed without a mat. The mat often detracts from the picture instead of bringing out its beauties, as it does with water colors. Landscapes with a great deal of detail in them require a very narrow frame, one that is as simple as it is possible to find, while, on the other hand, bold, broadly treated subjects require frames that are wide and plain, and large single heads are at their best in frames of either rococo or Florentine molding, unless they, too, are very broadly treated, when a deep, flat frame of either gold or stained wood will serve as the best background and bring out the artistic treatment of the subject.

HANGING PICTURES.

THE same writer gives some excellent advice on hanging pictures, always a difficult subject. A good rule is to hang the largest picture in a group on a level with the eyes, and to place the smaller ones about it with reference to their subject rather than size. The introduction of one or two round or oval frames into the group will relieve the monotony of oblong and square ones, and give a grateful sense of diversity in line.

Shapes and styles of frames must necessarily conform in a general way with the furniture of the room, and coloring must also be taken into consideration. There should be enough variety to avoid any danger of monotony, but at the same time harmony must be preserved, even at the cost of sacrificing a few favorites that happen not to be appropriate or suitable for a particular room.

As a rule, portraits painted by good artists should be hung in the hall, dining-room or library, but photographic portraits, if framed to hang, should be seen only in bedrooms or in the sitting room. If in frames to stand on tables, etc., a good plan is to devote one moderate sized table to them and have them all on it, so that there can be no danger of hurting any one's feelings.

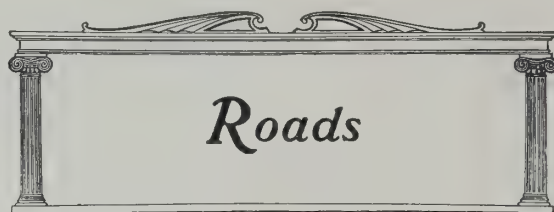
A SUMMER COTTAGE AT DELANO PARK, CAPE ELIZABETH, MAINE.

THE illustrations shown on page 99 present the summer home of Frederick Jerries, Esq., at Delano Park, Cape Elizabeth, Maine. It is erected on cedar posts with stone footings. The underpinning is formed with framework enclosed with matched sheathing and clapboards, which are painted gray. The first and second stories are covered with shingles and are left to weather finish. The roof is also shingled and treated similarly.

The interior throughout is planned with a view to securing every available space for use, and of a treatment of the same in a simple manner. The living and dining rooms occupy the entire front of the house, and both are treated with a Flemish brown effect. The walls and ceiling timbers are exposed to view, and the side walls are celled up with cypress battens. The stairway rises out of the living-room, and at the side of the stairway are placed paneled settles. The open fireplace is built of brick, with the facings and a hearth of brick laid in herring-bone fashion, and a mantel shelf.

The pantry and kitchen are fitted complete, and the walls and ceilings are made up with narrow-beaded stuff. There are also one bedroom and a lavatory on this floor. The second floor contains five bedrooms, a bathroom, and one servant's bedroom. The bathroom is furnished with porcelain fixtures and exposed nickel-plated plumbing. A cellar under part of the house contains ample storage space.

Mr. John Calvin Stevens, architect, Oxford Building, Portland, Maine.



Roads

ROAD MAINTENANCE.

IN the maintaining of the State roads, so little experience has been had on the part of the highway commissioners and the people in general, says the Rider and Driver, that it is usually thought that when a road is once built it will maintain itself. Many highway commissioners and town boards feel the same way toward an iron bridge and neglect to paint it, but even a bridge built of iron when neglected loses its strength, just the same as a road built of stone that is neglected will go to pieces. The real life of a stone road is dependent upon the care which it receives during the first six months after it is finished, and the perpetual attention it receives after that. Some commissioners think that, when a road is completed, if the loose stones are raked off once in thirty days it will maintain itself for three or four years, and then the road can be resurfaced with top dressing and a steam roller and again become as good as new and ready to go three years longer without attention. This method of caring for roads is far from economical and satisfactory. The best way to maintain a road is, as soon as it is turned over by the State to the town, to engage a man to take charge of a five-mile section at an agreed price per year and put him in charge of the road, providing him with surface material, which is stored at regular intervals on each side of the road for resurfacing. This man goes every day with his rake, his shovel, his hoe and his wheelbarrow the entire distance of the road, rain or shine. He removes the loose stones, he sees the shoulders are low at the side of the road so that water passes freely over them to the ditch, he keeps the sluices opened, he fills the depressions, closes up the ruts, and repairs each spot as fast as the surface dressing wears off or blows away. It is this constant attention which keeps the road always in good order and at the least expense to the community.

IOWA STREETS AND ROADS.

AN extended series of experiments in paving streets and roads, conducted in the State of Iowa for three years past, has yielded some interesting results. The chief results obtained have been the narrowing of the paved width of streets, the extension of paving to small towns, and the contests between the merits of brick and asphalt paving. The reduction of the widths of pavements on residence streets has greatly reduced the cost to property owners, and has been accomplished by paving the center and parking the margins on each side. The State Highway Commission is attacking the problem of bettering the roads throughout the State in a comprehensive manner. Broken limestone and gravel have been found the most available material for Iowa roads, notwithstanding the fact that the limestone is readily ground into a fine white dust.



The Garden

THE GARDEN MONTH BY MONTH—MAY.

MAY is a month of vast activity in the garden, in many respects the busiest. It is often possible, by the first of the month, to risk planting seeds of the first tender annuals. By the middle of the month almost all the outdoor seeds may be planted. It is quite as unwise to plant seeds too early as to plant too late. If planted too early the young plants are liable to suffer from the cold nights; growth is apt to be stunted, and sometimes maturity is reached too soon, leaving the garden bare and desolate at the end of the season and before the fall has actually set in. Late seed planting is likewise highly disadvantageous, as the plants seldom mature rapidly, and sometimes not at all.

Seed planting is, of course, preceded by prodigies of labor. Beds must be dug and made; paths must be cleaned; the lawn will begin to need constant attention. It is the first work in the open that counts in the end—laborious, hard work, perhaps uninteresting in itself, and certainly tiresome. But the plant lover is keenly alive to what will result in the end, and gives freely of his time and labor, often at considerable cost to himself. This early work is so arduous that it is always best to have much of it done by others, rather than for the owner to personally perform exhausting labor. It is true there are garden doctors who gladly avow that the working in the garden is the chiefest joy of all, and that no one ever gets as much satisfaction out of a place as when he realizes and knows that most of the labor has been personal. This, of course, can only apply to small places; for a garden of any size demands the unremitting attention of a gardener, and often a large corps of men are needed to keep a handsome place in handsome order. But the enthusiast for garden labor is the exception. The work is hard, exhausting, and tiresome; even the knowledge of certain results will not overcome the intense personal fatigue that garden labor entails. It is, of course, good exercise and healthful work. It is a fine thing to do. But it is so apt to be so discouraging in its effects on the human body that it will be found wise to go slowly.

Moreover, the true joy of a garden does not come from making it, but from seeing it. It comes from the pleasure of growth and beauty, from the delight of color and form. It is in seeing and watching plants grow and mature; in noting how they hide ugly spots and freshen dead corners. It is the garden itself that gives joy, not the labor spent upon it.

House plants should rarely be set out until the first of June. Even May is not free from frosts, and the plants carried over the winter within doors are especially liable to changes in temperature. Seasons vary, of course, and a hard and fast rule is impossible. In a certain general way it is safest to delay planting of all kinds rather than begin at too early a date.

Do not make the mistake of assuming that certain plants are "in style" more than others. There can never be fashions in plants. Some seasons the florists and seedsmen, seeking for sales, will urge the claims of special plants or groups of plants. Some seasons one kind will be seen growing in gardens more than another. But the true merit of a plant is the plant itself. Its own beauty and its own adaptability are the true measure of merit. Novelties and new plants are often attractive, sometimes enormously so; but their attractiveness lies in their own beauty, and not in the fact that they are not well known. A good plant is always good, and selections should be made because of the plant's own beauty or because of some association or attraction in it.

MAY FLOWERS.

ADONIS. Ajuga. Alyssum argenteum. Alyssum saxatile. Amsonia. Aquilegia argenteum. Arum (Cuckoo Flower). Aubretia. Azalea. Barberry. Bellis (English Daisy). Callicarpa Japonica. Calycanthus (Sweet Shrub). Chionanthus (White Wings.) Convallaria (Lily of the Valley). Daphne. Deutzia. Dicentra. Doronicum. Double flowered Almond. Double-flowered Crab. Double-flowered Peach. Epimedium. Euonymus (Burning Bush). Exochorda (Pearl Bush). Genista. Halesia (Snowdrop). Hawthorn. Honey-suckle (Bush). Iris aurea. Iris Siberica. Lychnis (Red Campion). Ornithogalum (Bulbous). Phlox subulata. Polemonium (Greek Valerian). Polyanthus. Potentilla. Primula (English Primrose). Pulmonaria (Lungwort). Pyrus (Cydonia) Japonica. Ranunculus. Rhododendrons. Ribes (Flowering Currant). Sanguinaria (Bloodroot). Spiraea filipendula. Spiraea Thunbergi. Spiraea Van Houttei. Syringa (Lilac). Tamarix. Trillium. Veronica. Viburnum (Snowball). Vinca (Myrtle). Weigela.—I. D. Bennett.



THE CALIFORNIA TENT CITY.

To the Eastern mind the tent is about the last place of abode for the month of January; yet the winter season is the time of year when the tent city flourishes in California and most abundantly.

At Coronado, at Catalina Island, and at two or three other places on the coast, says Ezra Thornton Kidd, in an interesting article printed in the Boston Evening Transcript, there are maintained veritable cities of tents, a widespread array of pink and blue, marshaled in rows. Here one finds a broad avenue running down between battalions of canvas habitations; on the signboard it says "Main Ave.," an electric car hums by, a watering cart is rumbling up a side street—one feels as if he had boarded another planet. Tents—streets of tents, tents—acres of tents!

The prevailing style of architecture is square-sided and gable-roofed. Most of these habitations have board floors. We stopped and spoke to a kindly looking person who was enjoying a cigar and a rocking-chair in front of his cotton castle. "We are strangers in your town," announced my companion.

"Never saw a tent city before?" returned the inhabitant, smiling at our expression of wonderment. "Our population is over six hundred. Healthy, too. We have our own plumbing, and the whole city is piped with fine running water."

"Is this your first season?" I asked.

"Oh, no; I've hired a tent here for awhile for two or three years. The city has grown, too, especially this last year, and other cities have started up along the coast. Why, the people who take their vacations in tents must number thousands now."

He told us that the plan had been started by the hotel companies, and that the tents are let by the season, month, week, or even by the day, just as if they were rooms. Those who come may bring their own furniture, linen, and pots and pans for cooking, but there is a long list of household necessities which can be hired at moderate rates from the company. All articles, from beds and oil stoves to a set of china or a sewing machine, are ready for those who did not bring everything they needed; clean linen is delivered every week on request, and the housework is taken care of by the company's staff of servants if their assistance is required. Some hire only one tent; one large family who goes to the city for their vacation every year occupy four—three for sleeping and one in which to cook and eat.

Within everything is made as attractive as possible. Peeping at random into the front flap of one of the tents, one sees a cozy little interior, with what our guide termed a "sitting-room effect." In the center is a small table with a lamp and piles of books and magazines, next the wall a couch covered in Turkey red and piled high with pillows, and there are several colored prints pinned to the canvas sides. Perhaps the front of the tent bears its name upon a sign. "Vacatia," "Halcyon Days," "Lazy Week," "Cotton Cottage," are some of those displayed along one of the cross streets of the city. Everything seems neat; even the streets are kept scrupulously clean by a corps of busy workmen, the employees of the hotel company.

No moment need be lost by the inhabitants in idleness, for there are a score of tempting amusements, contributed either by nature or the management. It never rains in this region of sunlight, but the constant westerly breeze from the blue Pacific keeps the air delightfully cool and invites the vacationer to exercise his limbs. The bathing is splendid, the boating no less, and when one can catch black sea bass that may weigh three hundred pounds, or any of the other large gamy ocean fish that are plentiful in these waters, it would seem that there were quite sport enough. The company, however, furnish tennis courts and bowling alleys, and periodically hold some sort of gala day, when prizes are offered for competition in athletic games, or yacht races, or there is a water carnival, or an evening illumination, brilliant with Chinese lanterns and Roman candles.

There is a pleasant informal social life among the more permanent tenters; it makes no difference that one family comes all the way from Kansas or Texas and the next from Los Angeles, comparatively only a few miles distant, friends are easily made with one's tent neighbors. Church services, held in the south end of the city, serve to bring many people together in social as well as religious interest and the settlement boasts of flourishing sewing circles and whist clubs. Calls are exchanged, and a cup of molasses is borrowed from the Joneses across the street in quite

as spontaneous a manner as if every one was living in his own Queen Anne in his native town.

The children, too—and a vast horde of healthy youngsters come every season—are compelled to have a good time. The open-air life, the ocean, and a great field of playmates from which to choose are quite enough to make the small boy beg his family to come to the city again—a city where one gets very near to nature and not very far from a cake of soap or a paper of pins.

Down at the southern end of this large field of tents, at the foot of the main street, there is a trim and immaculate white wooden block of stores—the apothecary, the meat market, the grocery, and the dry goods emporium. Here the tent wife does her shopping, here the lord and master buys his Sunday newspaper, here the children invest their pennies in peanuts, baseballs, or that good old-fashioned type of confectionery called in every corner of the United States, "jaw breakers."

Here, too, one finds the shooting galleries, bowling alleys, and an old white-painted excursion steamer, propped up against a wharf, now used as an annex to the casino, where an orchestra plays every evening and where the young people assemble to dance. In a group of trees near at hand is a rather handsome wooden building which is used for a theater, and every week the management puts forth some new performance of vaudeville or the drama. Beneath its walls is the covered stand where the brass band plays every evening, and rows upon rows of benches where one can take his after-dinner ease and listen to the music.

It must not be supposed, however, that because of the open air theater and the shooting galleries, the tent city partakes of a Coney Island atmosphere; on the contrary there is no unpleasant element in the population, no loud display of cheap finery, no noisy merrymaking. After the dancing, the concert and the theatrical performance are done the populace of the canvas metropolis slip away to their respective tent flaps to enjoy a long sleep in the open air; as one walks up the avenue, the lamps that glow inside the canvas roofs are disappearing one by one, until when the other end of the town is reached and one looks back from the higher ground, there appears only the white battalion of tents that look in the moonlight like a vast encampment of a ghostly army.

"Are there many such?" I asked of the man who knew.

"Several," answered he. "More and more tent cities every year. The people have learned that they can come to the Southern California coast, where it is always pleasant and dry, and live very inexpensively in a tent. Even the man with a large income may prefer to get the benefit of living in the open air, and free himself from the responsibility of a cottage or the formal life of a big hotel. Of course there are many other tent cities growing up which are just like any other summer colony, but the biggest of the canvas cities, those that occupy acres of ground, are run by the hotel companies. They are managed like a hotel, with all the rooms on one floor."

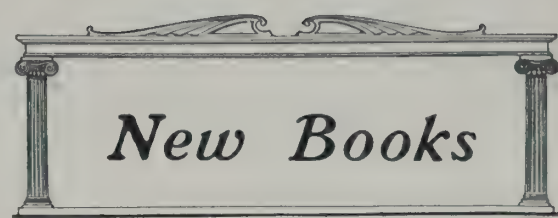
"Is there any other place in the world where they have these canvas villages?"

"Not that I know of. It's a California idea, only put into execution a few years ago. This summer has almost doubled the population that live this way. The companies that furnish the tents couldn't supply the demand this year."

As he was speaking, I remembered that some scientist had said that our people, through climatic influence, would revert to the old American Indian type; I wondered if these tent cities were the first phenomena of the change. When thousands of our folks live under canvas a part of every year, it is time to sit up and take notice, but it must not be overlooked that a tent city is a fairly well civilized place, after all. I was called back to that fact by seeing a policeman sauntering up the avenue, and as he asked us our business we turned our tired steps toward home. Perhaps there was a little envy in our hearts for those who were sleeping in the milk-white city at our backs.

NEW MATTINGS.

MATTINGS are now made in such numerous and attractive patterns that the housekeeper is sometimes bewildered at the choice offered by the shops. New matting is among the most fascinating of floor coverings. Its clean smelling odor gives a charm to a room that few other materials can give. It is bright and fresh and gives an unmistakable air of newness to an apartment which otherwise may be filled with old articles of furniture. The scale of prices is almost as varied as the patterns, and almost every pocketbook can find satisfaction in this thoroughly useful material. The patterns of the mattings are now made to correspond with the wall papers. One has a white ground, with stiff, conventional tulips scattered at intervals. Roses and other floral designs, both in color or simply green and white, seem more appropriate for summer than the attractive but warmer Persian and Indian patterns.



ANOTHER HARDY GARDEN BOOK.

ANOTHER HARDY GARDEN BOOK. By Helena Rutherford Ely. New York: The Macmillan Co. 1905. Pp. 15 + 243. Price \$1.75 net.

This is a thoroughly admirable book intended to give a brief statement of simple methods of conducting gardening operations, particularly in the small home garden. Mrs. Ely writes for women, for she opens her book with a dreadful picture of man's disregard of gardens, and his lack of interest in everything except eating. "Woman's heart in gardening," she says, "is with her flowers and shrubs, and the raising of vegetables is often a propitiatory offering to the other members of the family who might otherwise accuse her of too much attention to the merely ornamental and beautiful." This is a strange doctrine, surely, but fortunately it does not detract from the practical value of the book, which is of the highest. The subjects treated include the vegetable garden fruits, trees, perennials, lilies, autumn work in the flower garden and the flower garden in the spring. The author has drawn on her own ample experience in conducting her own garden, and every page of the book abounds with practical knowledge, information and advice of the most helpful kind. The numerous illustrations are dated to show the state of various flowers at definite epochs of garden growth. It is a pleasure to commend so useful and helpful a volume.

ANCIENT FURNITURE.

COUCHES AND BEDS OF THE GREEKS, ETRUSCANS AND ROMANS. By Caroline L. Ransom. Chicago: The University of Chicago Press. 1905. Pp. 128; 30 plates. Price \$4.50.

MISS RANSOM has produced a notable monograph on ancient beds. The ample descriptive text is supplemented with a full apparatus of notes and other archaeological matter, and the illustrations, in addition to the numerous beautifully printed plates, include many drawings and photographs in the text. Intended primarily as an archeological study, the book has a genuine interest to furniture lovers, dealing as it does with an important article of furniture little known or understood in the period of which it treats. Miss Ransom has treated her subject very fully, and if her studies have not been exhaustive, as she admits in her preface, they have been so extensive as to give her book immediate value as an authoritative monograph on ancient Etruscan and Roman beds. It is a book that reflects great credit on all concerned in its production, and is an interesting evidence of the interest in classical antiquities in the University of Chicago.

A SUPERINTENDENCE BOOK.

A HANDBOOK FOR SUPERINTENDENTS OF CONSTRUCTION, ARCHITECTS, BUILDERS, AND BUILDING INSPECTORS. By H. G. Richey. New York: John Wiley & Sons. Pp. 744.

THIS valuable book is intended as an every-day help to any one engaged in building construction, and most especially for superintendents of construction and inspectors. It well fulfils its avowed purpose. Based as it is on much matter already printed elsewhere, it contains a good deal of original material. The whole is arranged in a thoroughly helpful way, the various topics being admirably grouped, and the small pages packed from end to end with helpful material. The author covers the entire field of building experience, from the simplest to the most difficult. The book is of a convenient size for the pocket and well merits the commendation "indispensable."

HOUSES AND COUNTRY ESTATES OF PITTSBURGH MEN.

HOUSES AND COUNTRY ESTATES OF PITTSBURGH MEN. Published by George H. Gall & Company, Pittsburgh, Pa. Edition de luxe. Limited, 100 copies.

The development of the country estate has become so popular during the past twenty years that considerable interest has been shown in the vast number of individual and limited editions which various authors and publishers have compiled, embracing many of the large and important American estates.

This one, "Houses and Country Estates of Pittsburgh Men," is an excellent example of this kind of work. It is handsomely bound, and contains many excellent illustrations of the important estates in Pittsburgh, Pa.

The building of large estates is of general interest, and a book devoted to the illustrating of estates of this character always finds a popular demand.

Civic Betterment

THE NEW BERLIN.

BERLIN is probably as little known to the average American traveler as any of the great capitals of Europe; there are few books in English on its later development, and the illustrated magazines have scarcely illustrated it; yet it has been practically rebuilt in the last twenty years, and is now not only one of the great capitals of the world, but it has been recreated in so splendid a manner as to be a wonderful object lesson in civic embellishment.

Mr. Jerome Hart, the brilliant editor of the San Francisco Argonaut, has recently printed an illuminating article on Berlin, and summarizes some of the more important new buildings erected in the last few years. This is the list, with their dates: The Dammuhlen Gebäude, a castellated reproduction of the royal mills, 1893; the Luther Monument, 1895; the beautiful Gothic Marein Kirche, rebuilt in 1894; the new district courts with lofty rococo towers, just completed; the enormous police headquarters, 1890; the Church of St. George, 1898; the Gothic Pius Kirche, 1894; statue to Senefelder, inventor of lithography, 1892; Museum of Natural History, 1889; the Gnaden Kirche, a Romanesque church erected in honor of Empress Augusta, 1894; German Colonial Museum, 1899; the Reichstags Gebäude, 1894; National Monument to Bismarck, 1901; Sieges Allée, or Avenue of Victory, 1901; Emperor Frederick Memorial Church, 1895; Lessing Monument, 1890; Wagner Monument, 1903; statue of Queen Louisa, 1880; Potsdam and Victoria Bridge, with fine bronze statues, 1898; Teltow Courthouse, 1891; Hofman Haus, 1900; the New Cathedral, 1903; National Monument to Emperor William the First, 1897; the Schloss Brunnen, monumental fountain in front of the palace, 1891; royal stables and carriage house, 1900.

The space outside the Brandenburg Gate is changing almost from month to month. For example, two colossal statues have been recently placed there, Frederick and Victoria, the parents of the present Kaiser. In the autumn of 1904 the Kaiser unveiled two monuments near the Königsplatz. The Victory Monument, in the center of the Königsplatz, with its three rows of Danish, Austrian, and French cannon, dates only from 1873, but it is an ancient column compared with the many monuments around the Tier Garten. The Hall of the Reichstag, on the east side of the square, is an enormous building in the Renaissance style, over four hundred feet in length and three hundred in breadth, costing nearly \$6,000,000. It is a handsome yet florid building, elaborately ornamented with reliefs and sculptures. In front of it rises the National Monument to Bismarck, dedicated three years ago—a heroic statue of the statesman in the familiar uniform, on a pedestal surrounded by allegorical groups.

From the Königsplatz, the Sieges Allée, or Avenue of Victory, runs through the Tier Garten; this fine avenue, completed in 1901, is adorned with thirty-two monuments of Prussian rulers. Each monument is a marble hemicycle, in the center of which rises the statue of a Prussian ruler, flanked by the busts of two great men of his time. These thirty-two statues are of unequal merit, but all are interesting. As the earliest one, Margrave Albert the Bear, died in 1170, his portrait is necessarily ideal; so are the faces of thirteen of his successors. After the Elector Frederick the First the statues are portraits.

In addition to the monuments dedicated in the Tier Garten, the Kaiser also dedicated two others in the center of the city near the Altstadt—the Emperor Frederick Museum and an equestrian statue of his father.

Although most people call the buildings of Berlin "handsome," critical people, continues Mr. Hart, call them monotonously handsome; while hypercritical people call them commonplace. They may be handsome and yet commonplace, but they certainly look better than the commonplace yet ugly buildings that one sees in cities that are only commonplace and not handsome. Most of the Berlin buildings are stucco-covered. Berlin has rigid building laws—height is prescribed, as well as materials and methods of construction. Therefore Berlin has no unsubstantial buildings and no "skyscrapers"; an attempt was made a few weeks ago to have the limit of height raised, but it failed. There are no "veneered" or "jerry-built" structures, but most of her buildings are stuccoed.

When you drive along one of the imposing Charlottenburg streets, it is difficult to believe that only a few years ago they were village lanes. Kant street, for example, is miles in length; it is lined with magnificent buildings; far as the eye can see it stretches away with its vista of palatial structures. Yet within three decades all this did not exist. The village is changed

into a stately city. The pavements of the streets, the sidewalk pavements, the shade trees, the boulevard effects, the ornate street lamps, even the arabesque trolley poles of steel—the effect of all these is trim and handsome. The smooth pavements are not ruined by ugly rails with gaping slots to spring the axles or buckle the wheels of light vehicles. The tops of the rails are flush with the pavement, which is laid close up to the rails, thus leaving only a narrow slot for the flange of the car-wheel, rendering it impossible for other wheels to catch.

Long, straight streets seem to be a peculiarity of Berlin and its suburbs. One day when we were taking a motor drive out to the Tempelhofer Feld, or Parade Ground, the driver took us along the Chaussée Strasse. In a short time we were out in the open country, but the fine, smooth, well-paved thoroughfare continued, although lined only with vegetable gardens. So with Schloss Strasse—it also runs out into the open country, but it is far better paved than Market Street, in San Francisco.

Fifty Suggestions for the House

18. THE ARRANGEMENT OF FURNITURE.

IN the arrangement of lamps, as in that of chairs, to be truly complementary to the spirit and the purpose of your home you should study the needs of every inmate. Lamps should not be in out-of-the-way corners when one wants to read, nor in places where the light would be wearisome if people cared only to talk. Chairs should be placed where they provide the most comfort. The decoration of a home means nothing but a consideration of the requirements of a family or its guests, providing for them in the best and most felicitous manner possible.—Lillie Hamilton French.

19. THE KITCHEN FLOOR.

THE best treatment of all would be to saturate the floor with paraffine, by melting it in with hot irons, as is often done in hospitals. Such a floor would never absorb water or dirt of any kind, but it would be expensive. Usually a coat or two of linseed oil is put on; and as the mucilaginous gum contained in linseed oil remains soft in a warm, moist atmosphere, the dust and dirt of the kitchen stick to it, forming a black coating which it is almost impossible to wash off. A thick paraffine oil is sometimes used instead of linseed oil, but with little better results. Some housekeepers wash their kitchen floors with milk; but there are sanitary objections to filling the seams between the boards with dried and decaying milk. Probably wax in some form is the best application. In order to fill the pores and crevices of the wood as thoroughly as possible with it, the ordinary waxing powder may be supplemented by sprinkling the floor with powdered paraffine, scraped off a paraffine candle, or from the blocks sold for the purpose. When an oiled kitchen floor has become so black that the most persevering maid gives up the attempt to make it presentable the usual course is to paint it. Paint mixed thick, with plenty of japan drier, should be used, so as to get the floor well covered with one coat and insure its drying within a reasonable time; and it is judicious to employ a single pigment, such as French ocher, raw sienna, burnt sienna or raw umber, without mixing it with any other color.—T. M. Clarke.

20. THE VALUE OF WINDOWS.

ODD-SHAPED window-openings help to furnish a room. Sometimes a long and barren wall space is most successfully treated by locating in its stretch somewhere a circular or oval window with leaded glass. A pretty design in colored glass will have more value from a decorative point of view than any picture or piece of bric-à-brac. A dark, uninteresting corner may be made the most charming spot in a room, as the mellow light percolates through the opalescent glass.—William L. Price.

21. THE SLEEPING-ROOM.

THE bedroom should have a capacity of 56 cubic meters, with tight-fitting doors and windows, and a ventilating flue of at least 1.5 centimeters in diameter. The window panes should be of plate glass to prevent the too rapid cooling of the air of the room. Houses should be built with double walls, with an air space between them of at least 9.76 decimeters, in order to prevent wall dampness. If possible the room should be warmed by means of gas, as this is the best way of maintaining a uniform temperature. The bedstead should be of steel or iron, 2 meters in length, and of a width sufficient to accommodate one person only. Two such beds may be placed side by side.—Lawson Tait.

Landscape Architecture

THE LANDSCAPE ARCHITECT.

IN a paper read before the Chicago Architectural Club and revised for the Inland Architect, Mr. Howard Evarts Weed pointed out that the beauty and attractiveness of a home lie not alone in the house, for, however beautiful or costly this feature may be, it can not be considered alone, but as a part of its surroundings. A framework of flowers, shrubs and trees is needed in order to blend the whole in harmony. It will pay any one contemplating the planting of even a few trees and shrubs to employ a landscape architect for this work. He will then be reasonably sure of a good job well done, and as the landscape architect obtains wholesale rates on the purchase of nursery stock, this saving alone will generally more than pay for his services. At the present time no one thinks of building a house without engaging an architect to draw a plan of the building and supervise its construction. Yet it is only in recent years that this has been done. But in the future the importance of a planting plan of the surrounding grounds will be recognized just as surely as the importance of a building plan is recognized to-day.

At first thought it may seem an easy matter to plant out the grounds surrounding a building to trees and shrubs. And so it is. A child can place the roots of a flower or shrub in the ground and have it grow. In the same manner it is an easy matter to hang works of art upon the walls of an exhibit room. The paintings being at hand with the proper number of hooks in the wall, all that is needed is a step ladder and a helper to hand up the works of art and the job is soon over. I have never seen an art exhibit arranged in this way, so do not know how it would look. But I notice that at every art exhibit a committee of connoisseurs is appointed to properly arrange the exhibit. It seems that some paintings show up best with a certain amount of light, others with the light coming from a certain direction, and so on. Upon this account the hanging committee will spend days and even weeks in considering the proper placing upon the wall of a few paintings.

If all this trouble is important in the placing of a few landscape pictures in order to please the eye for the passing moment, how much more important is the placing of the individual specimens of nature in the making of landscape! Here we deal with the real things, the creation and representation of God, and not simply with a few colors put upon a canvas by man in imitation of nature. We are also making an arrangement, not for the passing moment, but practically for all time. Some flowers and shrubs do their best in shady and others in sunny places; some will not grow at all in a sandy soil; while others will succeed only with wet feet. A knowledge and appreciation of all these facts is necessary for the successful arrangement of the details of outdoor art. As the public comes to know these facts, there is an increasing demand for the services of the landscape architect.

The work of the landscape architect is very complex. To make it a success one must first love outdoor work. He must have an eye for the artistic in nature, for landscape gardening consists in the making of new scenery along natural and artistic lines. Nature is the great example from which we copy. He should have a scientific education, wherein general agriculture, horticulture, entomology and soil physics are the leading subjects. In his college course he should also receive particular instruction in surveying, mechanical and free-hand drawing. After completing a college course of this character, the future landscape architect should spend one or two years at some large nursery where ornamentals are made a specialty, in order that he may become familiar with the leading flowers and shrubs used in the landscape work. He should then spend a full year as an undergardener upon a country estate or at a botanic garden. Here he will receive practical training in the care and management of such places, in pruning, spraying, the management of greenhouses, the care of potted plants, and the thousand and one other lessons in this line which only experience can teach. Then after two years' association with a good landscape architect, where experience may be had in the making of the planting plans and the planting out from his own plans, the young landscape architect may fairly hope to make a success of his chosen profession.

CARPET brushed in the direction in which the nap lies will preserve the new look which every housekeeper wishes to retain.



Ventilation

THE PLACING OF THE INLET.

WHERE, asked a recent writer, should any special inlet for air be placed? Although it might appear paradoxical, the best way to prevent drafts was really to admit air more freely. If the change of air was too rapid in any room, the only way to prevent it was to reduce the outflow by contracting the sectional area of the outlet flue, because it was the cooler air pressing in on all sides of the room which forced air up that flue. And as with the same pressure only a given quantity of air could be forced through a flue of given section, if that section was reduced in size, a less volume of air would pass through it in a given time. Consequently, the velocity with which the air traveled from inlet to outlet would be lessened and drafts in the room might be overcome; but then the question would arise, Was the room being efficiently ventilated? If not, then the outlet flue area must be enlarged and a special inlet provided. So we come back to the question, Where should it be placed? After careful observation and experiment, extending over several years, it would seem that it should be on the same side as the fireplace opening, as nearly central thereto as might be, and toward the upper portion of the room (say, about two feet below the ceiling). By providing louvers or other means for distributing the incoming air throughout the upper portion of the room it would mix with the warmer air rising in front of the fire, spread out, gradually fall and make its way toward the fireplace flue without causing discomfort, because its velocity would be slight, and, coming in contact with the warmed surfaces in the room, its temperature would be raised, while if the fresh air entered freely at the special inlet less air would enter by the casual cracks and crevices. With inlet openings in any other position there would be less diffusion throughout the room, because incoming air would take a shorter and more direct line toward the fire and leave portions of the room less properly ventilated.

VENTILATION IN SMALL HOSPITALS.

In a small hospital situated in a broad expanse of green lawns, the necessity of taking the air for the heating coils from an elevation, says B. E. Taylor, in the Brick Builder, is not as necessary as in the city hospital, where the air at the ground level is full of dust and dirt and all manner of impurities. Under these ideal conditions the introduction of the air through wire mesh covered openings directly to the stacks serves the purpose very well, but a dust settling chamber that has the bottom hinged for cleaning is a safeguard, and the stacks should have slides so placed that every portion of the rough dust collecting castings can be thoroughly brushed and cleaned. When the basement under the pavilion is used as a plenum chamber, as is quite commonly the case, the entire room should be finished as smooth as possible with a plastered ceiling, smooth pointed walls covered with a coat of limewash and a coat of cheap waterproof enamel, with a smooth cement concrete floor sloping to a catch basin and drain, so that it can be thoroughly cleansed and purified with a hose. Usually the heating and ventilating flues are entirely inaccessible, and are therefore never cleaned. The register faces are screwed in place and never removed. They are generally so constructed as to be specially fitted to catch and hold dust and filth and be almost impossible to thoroughly cleanse, and the flues are loaded with filth that can never be removed.

The best practise is to omit, as far as possible, the register face entirely, and thus to open both the heating flue and the vent flue to inspection and dusting. When the heating flue enters the room, as it should, at least 8 feet from the floor, there is no danger of its being used by patients to throw rubbish into, and the vent flue opening at the floor is much more easily adjusted without a register. The mixing valve under the control of the nurse can be arranged to the amount and quality of the air admitted.

THE NEED OF VENTILATION.

Good ventilation is essential, points out the Metal Worker, because health depends on diluting the impurities to such an extent that the air may be breathed without injury. The most important of the inorganic impurities in the air is a gas known as carbon dioxide. This gas is present in the atmosphere at all times in the proportion of about 3½ parts to 10,000 parts of air in the country and 4 parts to 10,000 in cities. It has been universally accepted by experts that a proportion of more than 10 parts of carbon dioxide to 10,000 parts of air is detrimental to health, causing weariness and

headache, while even 8 parts to 10,000 will cause a feeling of closeness and stuffiness. The generally accepted standard of respirable purity of air is taken as 6 parts of carbon dioxide in 10,000 parts of air, the presence of carbon dioxide being taken as an index of the extent to which the air has been vitiated by the more dangerous organic impurities due to bodily exhalations. Carbon dioxide is a product of combustion, whether that combustion is slow, as in the chemical processes of the body, from whence it reaches the air through the lungs, or from the burning of gas or coal. When generated by the combustion of coal, it generally escapes through the chimney flue, but in the case of burning gas the carbon dioxide passes directly into the air that is breathed. An ordinary single gas burner requires about 45 cubic feet of air per minute, and the carbon dioxide produced will seriously vitiate the air of the room unless removed immediately. The removal or dilution of the impurities of the air we breathe can be positively effected at all times, and under any conditions, only by means of a mechanical or fan system of heating and ventilation. Thoroughly pure air is a minus quantity in very many cases, and ventilation generally means drafts. In office buildings of the latest types air is furnished to each room in much the same manner as is gas, electric light and heat. The air is drawn in from the roof, where it is relatively pure and untainted, and is carried downward into the basement, where it is heated and thence distributed, a proper quantity of fresh warm air being distributed to each office. The foul air is drawn up to the roof by exhaust or suction fans and discharged at a point remote from the fresh air intake, so as to obviate contamination of the fresh air supply.

NEW BUILDING PATENTS.

The following list of New Patents relating to Building and Sanitary Science is prepared expressly for the SCIENTIFIC AMERICAN BUILDING MONTHLY by MUNN & Co., Solicitors of American and Foreign Patents.

A PRINTED COPY of the specification and drawing of any patent in this list, or any patent in print issued since 1863, will be furnished from this office for 10 cents. If exact date or number is furnished. Remit to MUNN & Co., 361 Broadway, New York.

BRICK, STONE AND TILE.

ENAMELED SHEET METAL BUILDING TILE. N. Monshousen, Milwaukee, Wis. March 7.....	784,062
COMPOUND BLOCK. L. G. Hallberg, Chicago, Ill. March 7.....	784,158
BUILDING BLOCK. B. W. Davis, Phillips, Wis. March 7.....	784,476
BUILDING WALL AND CONCRETE BLOCK. W. H. Dunn, Richmond, Va. March 21.....	785,296
BUILDING BLOCK. E. E. Benner, Sargent, Neb. March 21.....	785,539
BUILDING BLOCK. J. F. Dunham, Waterloo, Iowa. March 28.....	786,250

CARPENTRY.

REVOLVING DOOR. J. Wendler, Berlin, Germany. March 7.....	784,459
WINDOW. R. W. Ennis, Buffalo, N. Y. March 14.....	784,554
WINDOW FRAME AND SASH. L. M. Neabrey, Cincinnati, Ohio. March 21.....	785,370
WINDOW. C. D. Tabor, New York, N. Y. March 28.....	785,778
WINDOW. W. J. Helm, Butler, Pa. March 28.....	786,213

CONSTRUCTION.

JOIST HANGER. G. Lane, Poughkeepsie, N. Y. March 7.....	784,218
OUTING COTTAGE. W. W. Keen, Richmond, Ind. March 7.....	784,492
HOLLOW WOODEN COLUMN. A. Westerling, Chicago, Ill. March 14.....	784,909
PROCESS OF CONSTRUCTING WATER-TIGHT MASONRY WALLS. C. M. Crawford, Hartford, Conn. March 14.....	784,925
COLUMN PEDESTAL OR SIMILAR DECORATIVE ARCHITECTURAL STRUCTURE. E. A. Munns, New York, N. Y. March 21.....	785,695
CONSTRUCTING CHIMNEYS OR STACKS. G. H. Thirsk, Philadelphia, Pa. March 28.....	785,779

ELEVATORS.

SAFETY DEVICE FOR ELEVATORS. E. L. Mater, Dowagiac, Mich. March 7.....	784,410
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FIREPROOFING AND FIRE EXTINGUISHMENT.

FIREPROOF FLOOR AND CEILING CONSTRUCTION. A. Pfeiffer, Chicago, Ill. March 14.....	784,878
FIREPROOF BUILDING CONSTRUCTION. J. Schirra, Pittsburgh, Pa. March 21.....	785,579

HARDWARE.

WINDOW OR DOOR FASTENER. C. D. Lovelace, Hereford, Texas. March 7.....	784,057
SASH FASTENER. W. M. Taylor, Weston, W. Va. March 7.....	784,446
LOCK. F. J. Vieweg, Plainfield, N. J. March 21.....	785,182
SASH BALANCE. J. Soss, New York, N. Y. March 21.....	785,334
WINDOW SASH FASTENER. E. T. Mason, St. Joseph, Mo. March 21.....	785,367
LOCK. H. Coudyser, Milwaukee, Wis. March 28.....	786,195

HEATING AND VENTILATION.

HEATING SYSTEM. F. W. Robertshaw, Pittsburg, Pa. March 7.....	784,073
INDIRECT HEATING SYSTEM. E. R. Knapp, Brookline, Mass. March 7.....	784,110
HEAT INTERCHANGING APPARATUS. G. T. Voorhees, Boston, Mass. March 14.....	784,716
VENTILATING APPARATUS FOR BUILDINGS. W. W. Reynolds, Pierre, S. D. March 14.....	784,963
VENTILATOR. N. Martin, Brooklyn, N. Y. March 21.....	785,112
STEAM HEATING SYSTEM. L. S. Burbank, Worcester, Mass. March 21.....	785,194
FIREPLACE HEATER. G. W. Buck, Louisville, Ky. March 21.....	785,401
WINDOW FASTENING FOR VENTILATION. Cannon and Morris, Chicago, Ill. March 28.....	785,710

MISCELLANEOUS.

CONCRETE WALL FORMING MACHINE. G. H. Truxell, Greensburg, Pa. March 7.....	784,084
APPLIANCE FOR USE IN BUILDING CHIMNEYS. W. T. Weightman, Dunham, England. March 14.....	784,606
OUTSIDE HANGING SCAFFOLD. T. J. Campbell, San Francisco, Cal. March 21.....	785,289

PLUMBING.

BATH TUB. J. A. Lefferts, Elizabeth, N. J. March 14.....	784,746
AUTOMATIC FLUSHING TANK. H. H. & J. G. Fleck, Philadelphia, Pa. March 14.....	784,784
CLOSURE FOR PLUMBING TRAPS. J. R. Duncan, New York, N. Y. March 14.....	784,931
LAVATORY AND SUPPORT. J. C. Reed, Allegheny, Pa. March 14.....	784,962
NOISELESS FLUSHING APPARATUS FOR CLOSETS. L. F. De May, Toledo, Ohio. March 21.....	785,541



Sanitation

THE COUNTRY HOUSE.

A PAPER on Country Homes and Accessory Buildings, read by Mr. J. Osborne Smith before the Architectural Association of London, contains a number of useful suggestions, some of which are here reproduced.

There should, said the writer, always be a small room, with opening window, on each bedroom floor, provided with a slop sink, which should be fitted as a water-closet, with flushing cistern, etc., connected to soil pipe, and also a sink for drawing hot and cold water. The waste from the latter should discharge into an iron (not lead) waste pipe. The combination of these two sinks in one set, so common in makers' catalogues and exhibitions, was often unsuitable for the intended purpose, because the hot and sometimes boiling water produced injurious expansion in the soil pipe, with disastrous results.

The space under these sinks should be kept free from enclosures, and every facility given to minimize the difficulty of keeping these places clean.

The main water cistern should never be placed in this room, although it was not an unusual position to find it.

The kitchen and scullery should have preferably a north aspect, lofty, well-lighted by windows reaching to near the ceiling. The walls and floors should be of impervious material, which might be readily cleaned. The sinks should consist of one or more for washing purposes, and might be of enameled fireclay, with wire or teak grid-tinned copper or lead-lined wood sinks—each of which had its respective merits and defects. Fireclay sinks were cleaner than the others, but were easily damaged with saucepans, and were liable to break the crockery unless the grids were used. Copper and white-metal sinks were perhaps the best, but were expensive. While lead lined were very general, they were dirty and frequently needed repair, but were less destructive to crockery. Vegetable sinks should also be provided for washing vegetables, and were best of the deep enameled fireclay kind, fitted with plug, grating and overflow, being much more easily cleaned than others.

All sinks should be supported upon cantilevers, and the spaces under should not be enclosed, although a guard-rail would be necessary to protect the pipes and traps from injury.

Teak sinks were sometimes used for washing-up purposes, but they needed constant cleaning to remove grease, etc.

Outlets from sinks should always be formed with large cobweb gratings. The trap below should be connected to the sink with a strong brass union, back-nut and lead-washer, instead of the spigot and socket with stoneware pipe so frequently met with in the cheaper class of sink.

Larders should have a northern aspect, with abundant cross ventilation, and be near the kitchen, but not entered direct from it. Wire gauze (preferably of copper) should be fitted to the windows and secured to wood frames on hinges. Some larders were fitted with pickling troughs, with plug and waste; these, of course, should not be connected to a drain, neither should a gulley be in the floor. If drainage from the floor was necessary, it should be formed by connecting the floor to an outlet through the wall as short as possible and discharging upon the surface of the paving outside. Shelves should be of slate, supported upon cantilevers, the walls lined with white-glazed bricks or tiles, and the floor formed with some impervious material. Personally, he preferred a slate table in the center of the room, leaving the walls free. Larders should not be formed underground.

The butler's and footmen's pantries and the still-room required sinks, which might be either of enameled fireclay or lead-lined. They were usually provided with draining-boards, preferably of beech, if not covered with lead. The space under the sinks was usually enclosed; when this was done the walls and wooden sides should be painted with white enamel and a lead safe formed on the floor, turned up all round at least 6 inches, having a 1-inch waste-pipe discharging through the wall into the open air. This cupboard was generally used for a pail to receive pieces, tea-leaves, etc., and soon became insanitary if precautions were not taken to ensure cleanliness. Enclosures under or around any sanitary fitting invariably became nuisances, and it was preferable, except in special instances, to omit them and everything that hindered the regular cleaning of the recesses. All these sinks should have drinking water laid on from the main supply pipe.

Publishers' Department

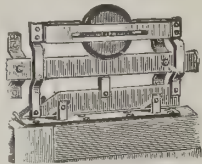
NEW STEEL JOIST AND TIMBER HANGER.

LANE BROTHERS COMPANY, of Poughkeepsie, N. Y., is adding joist and timber hangers to its product this spring, bringing out a full line of the article illustrated by the accompanying engraving. As may be surmised, the hanger is made from mild steel bar stock of uniform width and thickness, and is therefore of uniform tensile strength throughout its length. It is formed of comparatively wide stock to give broad bearing surfaces, by merely folding the metal, no part being twisted or stretched by the process of manufacture. The hanger



JOIST AND TIMBER HANGER.

fits snugly against the sides of the joist and beam, and affords good nailing surfaces on both. The supporting hooks are parallel, thus lending themselves to various convenient modifications of this part of the hanger, such as upwardly turned ends for setting in brickwork, downwardly turned ends for hooking over timbers, or I beams, or joining together to make double hangers, as when a joist is supported on each side of a beam. That this company, in producing hardware features, never allows its industrial activity to cease is shown by the frequent manufacture of articles of such practicality as the true and square supporting hook mentioned above. Although known most widely as a firm unsurpassed in the output of door hangers—of which one is pictured of the all steel single rail style in the second illustration—it is increasing its reputation by inventing and making a line of specialties. For example, out of its stock we mention the steel carriage jack, of which thousands, made in two styles, japanned and galvanized, are now in use. Neither cast metal nor wood is used in the construction of this light and compact "Double PARLOR DOOR HANGER. Lift Bar," operated by powerful compound levers. In the four sizes made, the adjustment is rapid, convenient, and with wide range in height. Lifting capacity, 500 to 4,000 pounds. Another, the automobile jack, has a shorter lift bar, and is suitable for vehicles and wheels from 28 to 40 inches in diameter. We call attention to the trade to the fact that this company has brought suit against a manufacturing company, of Aurora, Ill., alleging infringement of United States Letters Patent for wheel for door hangers and for door hangers, and that it is its intention to bring similar suits against manufacturers, sellers, or users of hangers which copy or otherwise infringe such of its manufactures as are covered by patents or to which it has acquired sole right by reason of their being known to the trade, by their appearance, as the manufacture of this company. By sending a request to the firm, Nos. 434-466 Prospect Street, Poughkeepsie, N. Y., one will receive the needed information in reference to many articles of hardware interest.



ELECTRICALLY PROPELLED VEHICLES.

ON account of the unusual enthusiasm over gasoline touring and racing cars, vehicles propelled by electricity have, by many, been overlooked. The electric proposition is, however, advancing daily in utility and popular estimation. Many of the dealers throughout the country who have successfully handled leading gasoline cars, have of late added materially to the profits of their business by carrying a well assorted line of electrics. The storage, care, and repair of electric carriages has also been demonstrated to be a profit-paying adjunct to the automobile agent's business. An agent for Pope-Waverley Electrics, about a year ago, adopted the plan of contracting to care for electric carriages at the rate of \$50 a month each; this amount to cover recharging of batteries; battery replacements, except in extraordinary cases; the proper cleaning, and some minor repairs. The cost of maintenance depends upon how the vehicles are used. A bona fide case is on record where a machine has been used for a whole season with an outlay, including everything, of less than \$10. But the man himself cared for the Pope-Waverley and the electricity was obtained from generators in his own plants. Such instances have only served to deceive the public as to the real cost, but the cases where a garage man will contract to give all the services as above mentioned for a fixed sum are facts which can well be compared with the regular expense of running gasoline touring cars. All such comparisons will show much in favor of electric carriages, and in exceptional circumstances

where the contrary is found to be true the people who used the electrics have thought them so simple that they have not been willing to take the proper care in those little matters which insure the successful running of the mechanism as a whole. The Pope Motor Car Company, of Indianapolis, Ind., lays great stress upon the point that Pope-Waverley Electrics, properly cared for, will cover more miles day in and day out than the average gasoline touring car. Some of the literature published by this company is planned to educate users and prospective purchasers to the importance of uniform care of batteries, etc. The belief is becoming quite prevalent that when users have a fair knowledge of the requirements of keeping storage batteries in A1 condition, electric carriages, deliveries, runabouts, etc., will become very popular in cities, near-by suburbs, and all regions where charging stations have been established.

STEAM AND OIL SEPARATORS.

CRANE COMPANY, of Chicago, Ill., has recently issued its advance circular describing the "Crane Steam and Oil Separators." They are used for the separation of water from live steam and the elimination of oil from exhaust steam, and are made in sizes from 1 to 30 inches, in horizontal, vertical, angle, and distributing types. The announcement of any new features in the output of a firm that has so well served the mechanical public for fifty years is of obvious interest. It has continually worked from the idea that the sequel of invention is success, and has demonstrated its point of view by finding its products placed well beyond the power of any but the highest pattern of apparatus to approach the efficiency and durability of its brass and iron work for all pressures. The circular contains twenty-six sheets, 13½ x 10½ inches, printed on white enameled paper, and handsomely illustrated from half-tone engravings. It will be sent to the trade upon request. Ask for "Advance Circular No. 01." The company manufactures wrought iron pipe, valves and fittings in brass and iron for all pressures of steam, gas, and water. "Crane Valves" were established in 1855. Since that time the great industry, under the management of the Chicago house, has placed branches in fifteen cities of the United States.

A REMARKABLE REPORT.

INTEREST attaches to every item in the statement of the Equitable Life Assurance Society published recently. In the first place, it is noticeable that all the principal ones show very large increases over the figures of the year before; and, in the second place, that, large as the amounts are, they have been reached in such a short period of time. Only a few months have elapsed since the forty-fifth anniversary of the Society, yet the Equitable ranks among the largest and best of the companies, and in point of financial strength is superior to all. The item of greatest moment is, of course, the surplus, \$80,794,269.21. It is well known that, owing to a depression in market values of stocks and bonds at the beginning of the year, the surplus funds showed a slight decrease at the end of 1903. During 1904, however, prices recovered, and the Society not only made up the slight decline, but, in addition, added a large amount, so that at present the surplus shows a satisfactory increase. In consequence of this increase and the large amount paid in dividends, \$6,001,902.51, the Society's total earnings are larger than in any previous year of its history. The assets of \$413,953,020.74 also show an increase larger than ever before realized by the company in a single year. The income from premiums was \$62,643,836.74, and from all other sources \$16,432,859.21, making the total receipts \$79,076,695.95. Death claims of \$18,049,539.35 were paid, and other sums for endowments, annuities, surrender values and dividends, making the total payments to policy-holders \$36,389,047.30. The outstanding assurance amounts to \$1,495,542,892, and the new business issued and paid for during the year to \$222,920,037. These are satisfactory amounts, and show that the conduct of the business has been energetic and successful. The statement is one of which the Society and its numerous policy-holders may well be proud, and for which those in charge can be sincerely congratulated.

In Berlin the height of buildings is limited by law to a little over 72 feet. Recently a petition was presented to the Ministry of the Interior asking that the building laws be so modified as to allow of steel frame buildings of greater height being erected. After consideration of the matter, the Ministry has refused the petition.

It is significant of the progress of American pottery that within a recent period several large importing houses have withdrawn from the cheaper grades and deal only in fine china.

DUSTLESS ROADS.

AN English writer in discussing the subject of Dustless Roads, pointed out that treatment must be either palliative (and therefore temporary) or permanent. In the first category he classed Westrumite, Pynolene and Aconia, which consist principally of crude petroleum, to which ammonia or other soluble substance is added. These materials are all viscous, and to this property their efficiency is due, for their presence on the roadway binds the dust and makes it so heavy that it cannot rise. The objection to them is mainly their smell. Westrumite and Aconia had, however, taken a permanent place as dust layers. The use of water should be condemned, for it only washed away the binding material of the road, and in hot weather was efficient for only two hours, whilst the other palliatives mentioned were able to keep a surface free from dust for from ten to fourteen days. Among the more permanent remedies was tar. The cost of coating roads with tar worked out at between two and five cents per square yard, but once laid, it would remain effective for six months. As a "bottoming" agent tar, however, possessed a particular value, for when so used in the formation of roads the sinking of the upper metal prevented the rising of small loose grit to the surface.

The most perfect road material hitherto obtained was, however, "tarmac," formed by dropping heated furnace slag into tanks of tar. The slag, being porous, absorbed the tar, and when used for roads formed a surface absolutely waterproof, and therefore dustless. Portions of the roadway in the neighborhood of Bath had been so treated more than twelve months ago, and yet, while absolutely dustless, they showed no signs of wear. "Tarmac," however, was expensive, though only slightly more so than the best granite or quartzite.

SUBSTITUTES FOR PLASTER.

O. C. S. inquires: Please refer me to manufacturers of substitutes for plaster. We want something warmer, and that will not produce the echoes that plaster does on the walls of a room. Do you know of any paper or pasteboard materials for this purpose furnished at a moderate price? We want them for the walls of an ordinary dwelling house. What do you recommend?

REPLY.—Various materials have been proposed, from time to time, as substitutes for plaster. The advertising pages of the BUILDING MONTHLY will give some information on this point. Plaster boards and slabs, if used in a room, require a finishing coat of plaster to make a complete piece of work and finish. Cerupo boards may be plastered with a finishing coat or they may be covered with wall-paper, burlap, etc.—Editor BUILDING MONTHLY.

THE AMERICAN INSTITUTE OF ARCHITECTS.

H. T. M. writes to ask concerning the approximate membership of the American Institute of Architects.

REPLY.—The membership given in the Proceedings for 1903, dated 1904, is as follows:

Fellows	360
Associates	395
Honorary	55
Corresponding	77
Total	887

SAWING STONE BY WIRE.

THE task of sawing stone by means of wire has been perfected in France. The plant utilized for the operation consists of an endless wire, which passes round a series of pulleys, one of which is a driving pulley. A straining trolley working on an inclined plane insures requisite tension. The saw frame is placed between the driving shaft and the trolley, and on it the guide-pulleys for the wire saw are fixed. The wire as it travels presses lightly on the stone, and the cutting is done by sand mixed with water. The wire is built of three strands of steel wire of 0.098 inch diameter. The strands are twisted fairly tight and make one turn in 1.18 inch. In the workshop the wire can be driven at a speed of 23 feet per second, but in quarries it is not advisable to increase the speed above 13 feet per second. In order to produce the cut, a uniform force has to be exerted, while at the same time the force must also be capable of being easily varied, and must be proportionate to the length of the cut.

PANELED walls of wood should never be desecrated by having pictures, no matter how beautiful or costly, hung about them, but when a wall is only wainscoted, pictures above the wood are most attractive. Nowadays all pictures are hung flat against the wall and the wires hung on two hooks straight up and down, so that they are as little noticeable as possible.

PEARSON COATED NAILS have a holding power more than twice as great as any other kind. They resist the weather longer than ordinary wire nails and have other advantageous features. The coated flooring nails—under the trade name of “Leaders”—are a radical departure from the rut, and excel in every detail. They save 30% in labor and are sold at attractive prices.

J. C. PEARSON CO. BOSTON

FULLER BLDG.
NEW YORK

RAILWAY EXCHANGE BLDG.
CHICAGO

W. & J. SLOANE



BERLIN RUG, DESIGNED AND MADE BY W. & J. SLOANE FOR THE READING ROOM OF THE REPUBLICAN CLUB, NEW YORK CITY.

THE problem of appropriate floor coverings to harmonize with the classical styles of interior decoration is successfully met in our specially designed

WHOLE CARPETS

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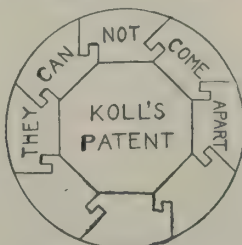
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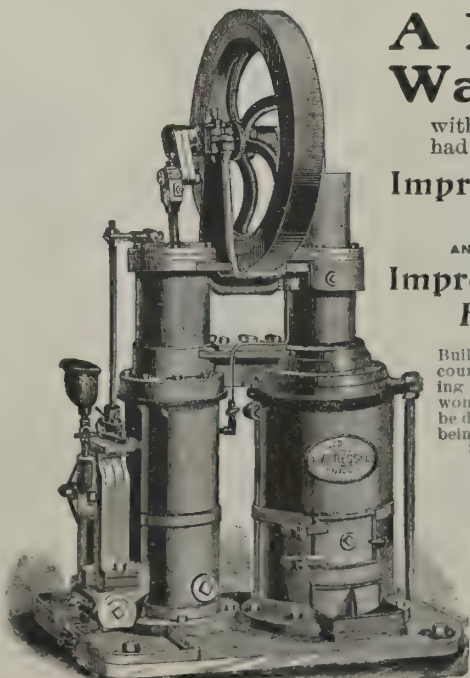
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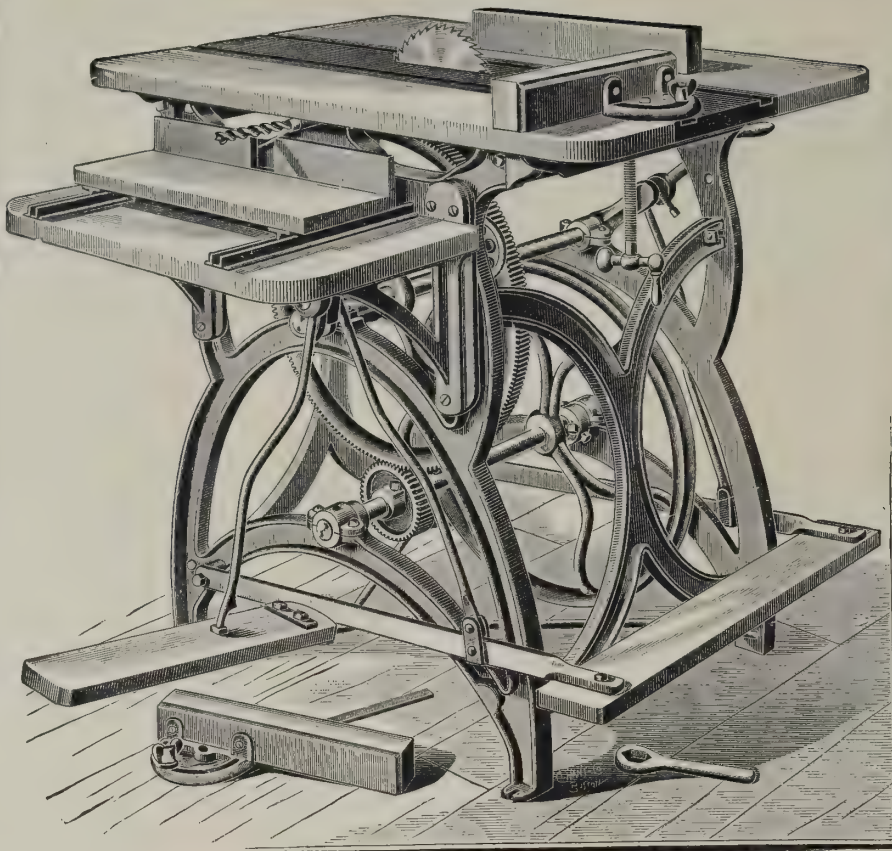
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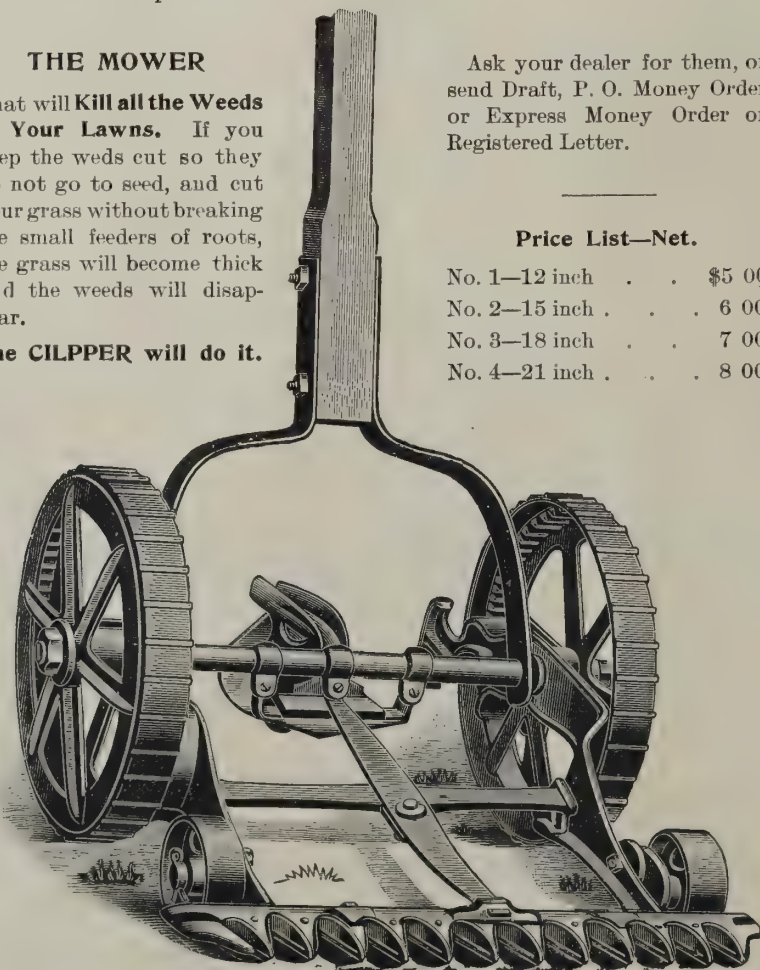
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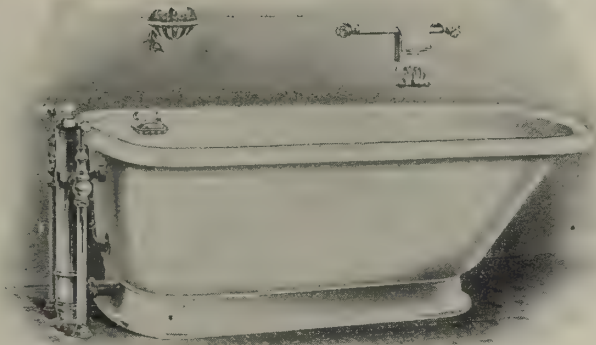
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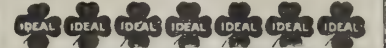
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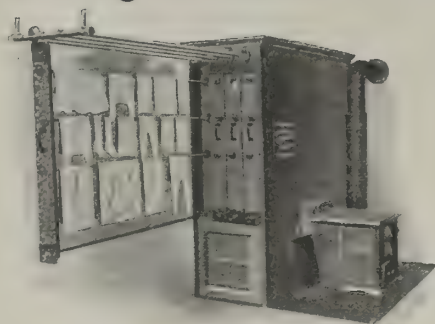
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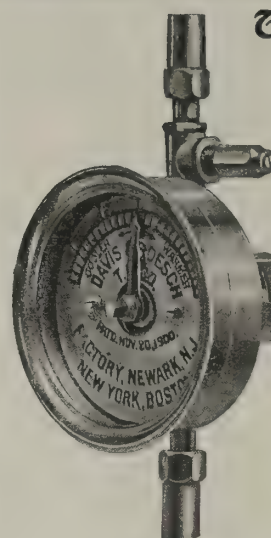
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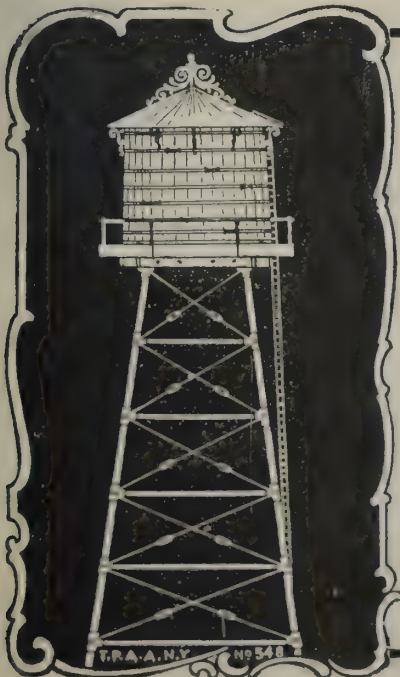
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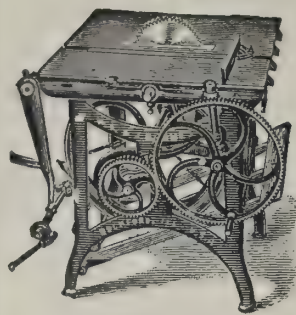
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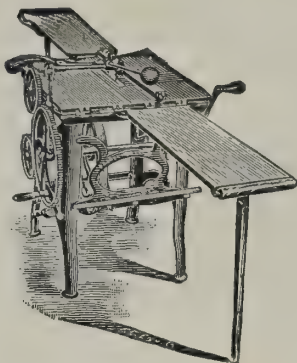
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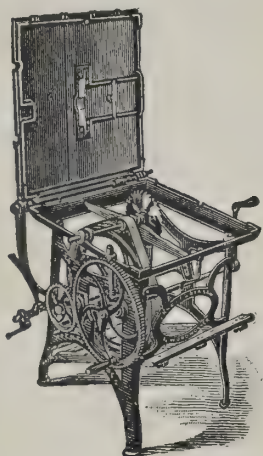
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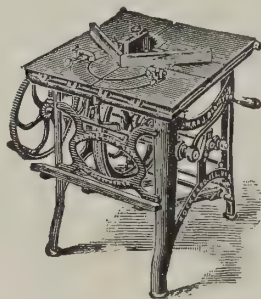
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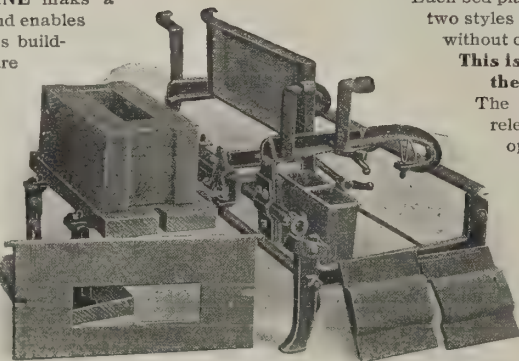
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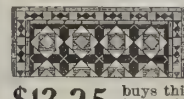
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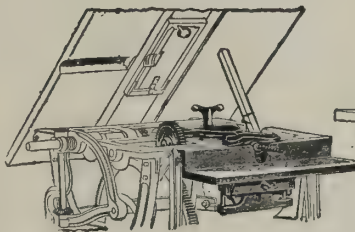
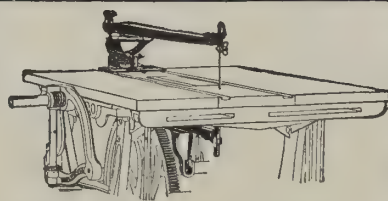
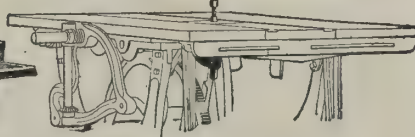
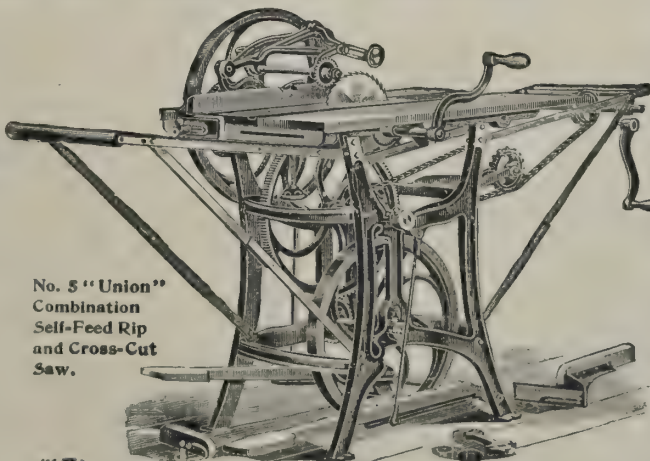
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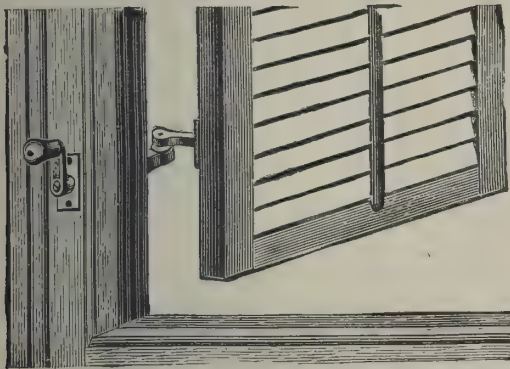
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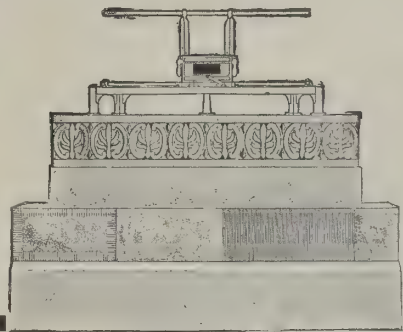
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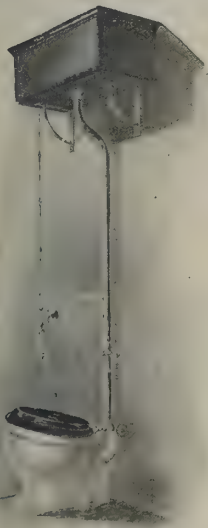
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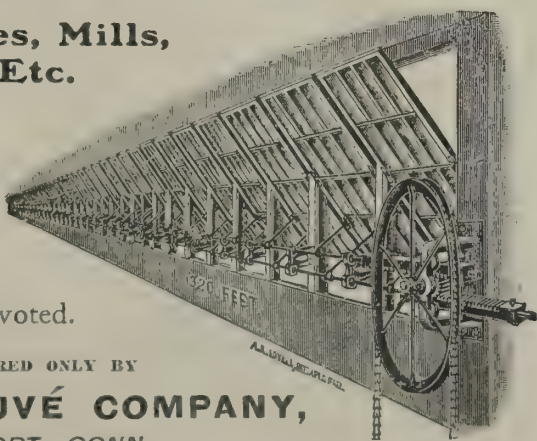
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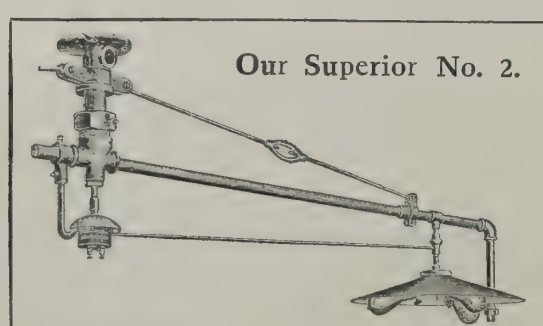
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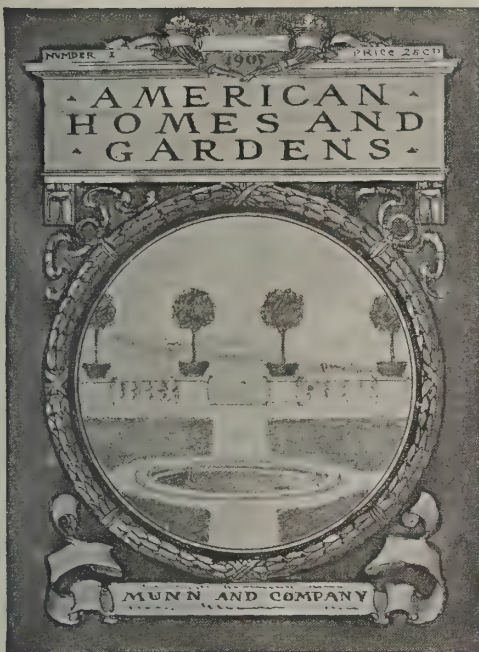
SPECIAL ANNOUNCEMENT

To be published on July 1, 1905: A NEW PUBLICATION

ENTITLED

American Homes and Gardens

(Successor to SCIENTIFIC AMERICAN BUILDING MONTHLY)



THIS new monthly magazine will be much broader in scope than its predecessor. It will have the word "HOME" for its keynote.

The man to whom this word has no meaning will have no interest in this new publication. It is the intention of the Editor to take the reader with him to various parts of the country and show him how the better class of people live, whether the house may have cost \$3,000 or \$300,000. Good taste is, perhaps, more necessary in the building and furnishing of a house of small cost than in a mansion of importance.

The Editor will not leave you on the outer doorstep, however, but will take you within, where you may see how the house is furnished and decorated and how the owners live. Then you may have a walk through the garden, and then to the summer house, where, perhaps, the plan of the formal garden culminates.

There will be published articles on room decoration and furnishing, showing how the furniture may be arranged to produce the best effects, what pictures may be hung, and what bric-a-brac, inherited from some former mansion, may with advantage be discarded. In short, the new publication is intended to be

OF INTEREST

To the one who has a Home.

To the one who has not a Home, but who intends to have one.

To the one who wishes to improve the Home and make it more attractive.

To the one who appreciates that the Garden and the House should form part of an harmonious scheme.

Each issue will contain an article on some important mansion, showing, if possible, various views of the exterior, the interior, and the garden. Plans are published with most of the residences shown.

The new publication will be issued monthly, and will be somewhat smaller in page size than the "Building Monthly," viz.: 10½ x 14. It will have a handsome colored cover. It will have about 50 pages each issue. Price, 25 cents each issue; \$3 a year.

SPECIAL OFFER TO READERS OF THE "SCIENTIFIC AMERICAN"

To any one subscribing before May 1, 1905, the subscription price will be \$2.50 for "American Homes and Gardens" for one year from July 1, 1905, to July 1, 1906, and the subscriber will receive free of charge the "Scientific American Building Monthly" for May and June.

To any one subscribing before June 1, 1905, the same terms will be offered, with a free copy of the June issue included.

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Volume IX., January to June, 1890, price \$2, has twelve colored plates, fifty-six illustrations of houses with their plans, and fifteen pages of details drawn to scale. The houses vary in price from \$1,200 to \$7,000.

Volume X., July to December, 1890, price \$2, has twelve colored plates beautifully executed, fifty half-tone engravings of houses in both city and country, and there are fourteen plates of details. Several small churches are also illustrated. The houses vary in price from \$900 to \$5,000 and over.

Volume XI., January to June, 1891, price \$2. The volume contains twelve colored plates of great merit. There are sixty elevations of houses, churches, stables, carriage-houses, accompanied by several plans. One house in this number cost only \$695.03; the other houses range in price up to \$10,000.

Volume XIII., January to June, 1892, price \$2. As in the case with the other volumes, there are twelve colored plates; sixty-two houses varying in price from \$2,800 to \$25,000, and a number of chapels and churches, and also one schoolhouse. This is a particularly interesting volume.

Volume XIV., July to December, 1892, price \$2. The twelve colored plates of this issue are very attractive. There are fifty-seven elevations of houses, churches, and stables, each accompanied by a plan giving the sizes of the rooms. Some city residences are illustrated. One of the houses illustrated cost \$1,000 and one \$1,650, and the other houses vary in price.

Volume XV., January to June, 1893, price \$2. Twelve colored plates form an interesting feature of this volume. There are fifty illustrations and plans of houses, churches, stables, etc. The houses are of all prices, ranging from those which are comparatively inexpensive to elaborate residences costing several thousand dollars.

Volume XVI., July to December, 1893, price \$2. There are fifty-two engravings of houses, churches, etc., and each is accompanied by a plan. Some of the houses in this volume are as low in price as \$600. The thousand dollar workingman's home at the World's Fair is also included in this volume.

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Volume XXI., January to June, inclusive, 1896, price \$2. There are six colored covers, ninety-two engravings made from photographs of houses taken specially for the purpose. The illustrations include churches, libraries, and other buildings.

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Volume XXIII., January to June, 1897, price \$2. In addition to the six colored plates there are one hundred and seven interior and exterior views of the latest types of houses by prominent architects. The miscellaneous matter includes a village hall, several libraries, a gate lodge, schools, hospital, etc.

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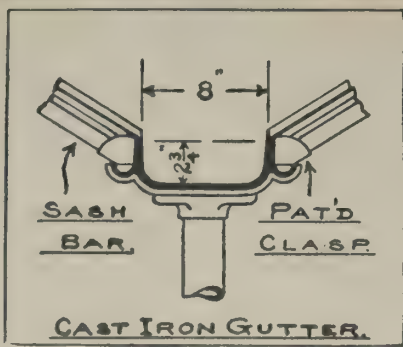
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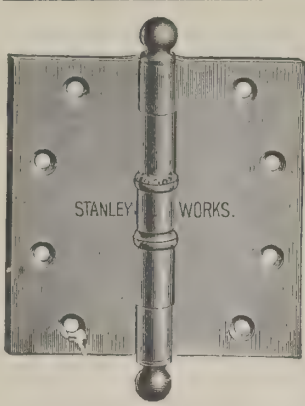
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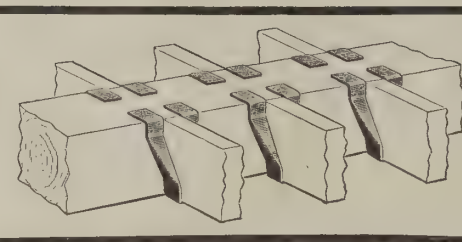
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NEW YORK, JUNE, 1905.

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THE ENTRANCE.

"TALBOT HOUSE," ESTATE OF TALBOT J. TAYLOR, ESQ., CEDARHURST, LONG ISLAND, N. Y.—See page 113.

MR. CHARLES A. RICH, ARCHITECT.

SCIENTIFIC AMERICAN BUILDING MONTHLY

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NEW YORK, JUNE, 1905.

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*The engravings presented in this issue are made from photographs taken specially for the SCIENTIFIC AMERICAN BUILDING MONTHLY.

MONTHLY COMMENT.

AMERICAN HOMES AND GARDENS is the title under which the BUILDING MONTHLY will appear in the future, beginning with the July number. It will be, in a very complete sense, a new magazine, new in name, new in size, new in spirit and in form. It will, in short, be a new magazine, published under the same auspices that, for many years, have made the SCIENTIFIC AMERICAN BUILDING MONTHLY the leading architectural journal of America, and to which will be brought the experience and knowledge of more than a half century of continuous effort.

AMERICAN HOMES AND GARDENS will have the HOME as its keynote. It will be concerned with the Home in every aspect in so far as it relates to the house, its building, its material, its design, its erection, its furnishing, its decoration. It will treat of the house within and without, of the garden with which it is surrounded, of the grounds adjacent to it, of the streets and roads upon which it is placed, of the villages, towns, and cities in which it is located. This broad program will be treated and developed in the broadest possible way, because unless everything which, both in the most direct and the most indirect way, leads up to the home, is influenced by it or influences it, receives careful, intelligent, artistic treatment, voices the best of modern ideas, expresses the best in modern life, realizes to the utmost all that modern art and modern science contribute to it—unless these constitute the end and aim of home making, the result can only be unfortunate failure and retrogradation.

And with failure in home making and garden making, AMERICAN HOMES AND GARDENS will have nothing to do. Its program will be constructive, not destructive. It will look onward and upward, touching on the past only so far as it is necessary to illustrate the present and the future. This is a definite program, in which we bespeak the cooperation of the many friends who have stood with us in the past, and the many more we hope to win and gain in the future.

There is room, and ample room, for a richly illustrated monthly magazine which will treat of the Home from the initial point of architecture. The house is

the great essential element of the home life. One needs a house as one needs clothes. Civilization is as impossible without the one as without the other. And from the house proceeds every other form of activity concerned with the home life. The open fields and shady woods, the delights of country sports and occupations, the fascination of the open, all contribute to the charm of outdoor life, but the modern house, with its high development of scientific and artistic equipment, makes this life both possible and practical.

And so, from the house, AMERICAN HOMES AND GARDENS will conduct the reader to the interior; it will offer advice and suggestion in the arrangement of rooms and furniture; it will illustrate and describe the house in its entirety, within and without; it will treat of gardens and of garden making; and it will deal with such aspects of the house surroundings as help to make it and assist it. It will be a magazine at once of architecture and of the home; and it will be of value and of interest to every one who has a home, to those who hope to have one, to those who wish to improve their homes and make them more attractive, and to those who appreciate the harmony that should exist between the house and its garden.

HELPS TO HOME BUILDING.

THE SIXTH OF A SERIES OF TWELVE PAPERS.

THE ROOMS AND THEIR USES.

THE rooms contained in the average American house—the house of average size—comprise the hall, drawing-room—sometimes called the parlor or reception-room, according to its size—the living or sitting room, the dining-room, the kitchen and its dependencies for the service, bedrooms, and bathrooms. The two latter are, of course, on the upper floors; the former group fills the ground floor. The number and use of the rooms depend on the size of the house, which, in its turn, depends on the size of the family and the tastes and inclinations of its members.

Houses of the first rank in size will contain many special rooms, a library—even if no one is particularly literary—a billiard-room, a smoking-room, a breakfast-room, a morning-room, boudoirs and suites of bedrooms, studies, and dens. In such houses the servants' quarters will be quite extensive, necessitated by the large corps of servants which people of wealth find essential to their well being. There will be at least one servants' dining-room, and possibly an upper servants' dining-room for the higher grade of servants. There will be a recreation hall, several pantries, rooms for the butler and housekeepers, and the uppermost floor may be entirely set aside for the servants' use, who will have all the comforts of a luxurious home for themselves while rendering the slightest possible service.

The evolution of the hallway, from a narrow passage to a spacious, pleasant apartment, which may or may not contain the main stairs to the upper story, is one of the most interesting phases of the development of the modern plan. To a very considerable extent, it has usurped the place of the sitting-room, and has become the room of general resort, the common meeting-place of the family, and is at once the sitting-room and the living-room. When this is the case, a real economy in plan is provided, and the space of one room wholly saved. Its advantages, however, do not end with this. A pleasant, open, spacious, agreeable hall is the best possible introduction to a house. It sets a note of hospitality and of joyousness such as can be had in no other way. It speaks of friendly family intercourse. It is at once the heart and soul of the house. It is rapidly becoming an institution, indispensable to the householder, charming to his guests, thoroughly enjoyed by the family.

The hall, in its development, has well nigh swallowed up the parlor. And a very good thing it has. The parlor of the old type, a spacious room, decked with heavy furniture, opened only on Sundays or for the edification of an occasional visitor, was the dreariest and most useless room of the house. It occupied valuable space; its furniture was both heavy and costly; its utility as a reception-room was almost nil; yet its tradition as a valued apartment was so pronounced that its dying has been hard. It has not yet been exterminated, but excellent progress has been made in its undoing.

The parlor rested on the mistaken notion that the best room in the house should be reserved for the visitor, whose use of it was the slightest, and whose interest in it nothing at all. A wiser, better use of household space is to keep the best rooms for every-day use. The family have the best right to the house, for it is theirs, and their money has paid for it and supports it. It is right and proper to give what honor one may to the stranger and the visitor; but the object of having a house is to get the most out of it for the occupants. It is no selfish view which insists on their coming first; it is simply common sense and common right.

The parlor and drawing-room out, there remains only

the reception-room of the group of purely ornamental apartments. Unlike the parlor, the reception-room has a special value of its own as being a convenient place where visitors may be received apart from the family group which may be occupying the hall. A small room or alcove is all that is needed, and in most modern plans this is all that is allowed for this purpose. A reception-room partakes somewhat of the character of the parlor. It is a festal or ornamental room, used only on special occasions, and chiefly for visitors. It stands quite apart from the daily family life.

The living-room is the most important room of the house in many respects. Even this can be omitted if the hall is large enough and pleasant enough, and the family life can dispense with a special sitting-room. The name is awkward, but no other word so well expresses its use as a place of resort, a place to read in, a place for common intercourse, a place for restful quiet. In very large houses the living-room will be sumptuously furnished, crowded with ornaments and articles of interest, and have all the characteristics of a state apartment. No doubt it meets the conditions for which it is intended, but less gorgeously furnished rooms give evidence of greater comfort, and comfort and convenience are the characteristics in chief of the living-room, for it has been furnished for the furtherance of these pleasures and for no other purpose.

The dining-room is another important room and quite indispensable, for very obvious reasons. A bright, cheerful, open, airy apartment is the ideal dining-room of the summer country house. Here, if in no other room, the family is bound to gather daily, and it is for that reason entitled to a royal place in the plan. Its furnishing is simple; the dining table and chairs, a sideboard on which rich plate or fine china may be displayed, a serving table, and possibly a china closet for the choicest glass and porcelain, constitute the necessary pieces.

It will, of course, be in immediate juxtaposition to the service rooms and the kitchen. The latter may be as elaborate as you please, the size of these very essential apartments depending on the size of the house and the amount of entertaining that is done. A butler's pantry, for the care and storage of the table service, should never be omitted, whether one keeps a man servant or not. One can never have too much space for the storage of the table ware, and the pantry, coming naturally between the kitchen and the dining-room, interposes a very necessary barrier between these important rooms.

So many devices have been perfected for the convenience of the kitchen that the very largest choice can be made. Large kitchens are costly in their fittings up, requiring much space for the proper accommodation of the ranges, warmers, tables, closets, and other necessities. Even smaller kitchens must be quite complete in their appointments, or such trouble will ensue with the high functionary who presides over it that the entire family life may be disrupted, and all sorts of unmitigable ills follow.

The hall, the living-room, the dining-room and the kitchen constitute the group of rooms without which there will be no house at all, and which must be included in every plan if the dwelling is to be habitable. But there is, of course, no limit to the number of rooms that may be provided for on the ground floor. The servants' quarters are so entirely dependent on one's means that their elaboration must be left for individual treatment. What is done in this direction will depend on one's mode of life or what one has stored away in banks or in the vaults of safe deposit companies. As for the other general rooms—the library, the billiard-room, the smoking-room, if it be separate from the billiard room, the room especially set aside for the master of the house, and for which the horrible title of the "den" has come in vogue—these rooms likewise depend on the size of the house. It will be useful, however, to bear in mind that no room should be provided for which there is no real use. A shelfful of books does not constitute a library; a billiard table is quite unnecessary if there is no one within to play billiards; the "den," surely only a morose and disappointed man will insist on a special apartment in which he can idle away his troubles apart from his family.

Upstairs there can not be too many bedrooms nor too many bathrooms. The most abundant supply of either will, at times, and at the most vexatious times, fall far short of the need. A very good plan, if the space can be had, is to arrange the bedrooms in pairs, with a common bathroom between. Boudoirs and dressing-rooms are special apartments seldom possible in houses of average size. The nursery will not be forgotten, for to many it will be and is the choicest room in the whole home. A good deal of space may be needed for this department, including rooms for the nursemaid, a special bathroom, and a playroom for later childhood. These rooms should be so arranged that they can be wholly cut off from the rest of the house in times of sickness or of great festivity among the grown ups.

NOTABLE AMERICAN HOUSES*

BY BARR FERREE.

"TALBOT HOUSE," ESTATE OF TALBOT J. TAYLOR, ESQ.,
CEDARHURST, LONG ISLAND, N. Y.

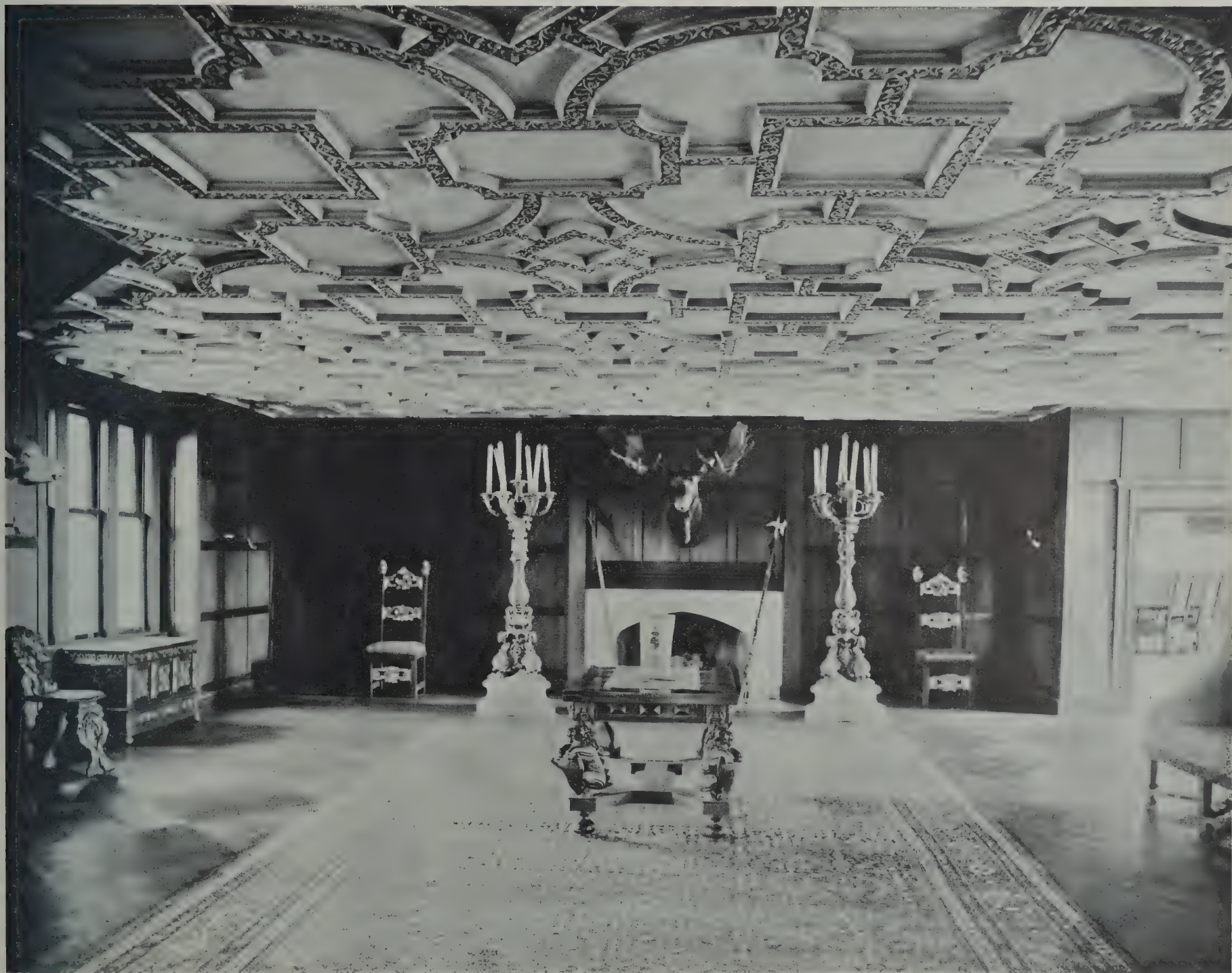
MR. TAYLOR'S house is a rambling structure pleasantly envired in the agreeable landscape for which Cedarhurst and the near-by places in Long Island are famed. It is built partly in brick and partly in half-timber work. The irregular plan lends itself very happily to the timbered gables, many dormers and fine chimney stacks, which constitute the external features. The house was not, indeed, built all at one time. The oldest wing, closely covered with ivy, is now apportioned to the service; but the new parts have been so well unified with each other and with the older structure that the house is, in a very complete sense, a thoroughly harmonized composition. This is the more noteworthy since the external architectural expression is quite decidedly irregular and varied. The larger part

porting a gabled and dormered upper story, which, containing as it does the personal rooms of the owner, is necessarily one of the chief parts of the building. At the further end, beyond the service wing, the ground dips considerably, and the house there is decidedly lower. The general plan consists of a main part, containing the entrance hall and the drawing-room, with two forked branches, running out at different angles, the larger one of which abuts against a pavilion containing the library. The picturesque architecture of the half-timbered upper story, the high-pitched roofs, and the gay and ingeniously varied dormers, are delightful expressions of this irregular ground plan.

The house is entered through a glazed and latticed porch, thickly overgrown with ivy. The hall is paneled in oak, very darkly stained—square, plain panels without ornament and without cornice rising directly to the plaster ceiling, which is decorated with an elaborate geometrical design, the patterns outlined in molded ornament decorated with scrolls and foliage.

side of this window, and on each side of the doorway, are fine old lantern-standards. The draperies are rich red velvet; the furniture is old gold, covered with tapestry; and a superb open cabinet, elaborately carved, adds to the beauty of the room.

Directly opposite the main doorway, in the hall, is a door that leads to an enclosed porch or sun parlor. The door opens on to a balcony or gallery, for the main floor is some steps lower down, and is paved with brick. Fine palms and other plants are placed here, and in one corner is a fountain. Further on, in the hall, the corner forms a passage by which the dining-room and further parts of the house are entered. The plan changes its direction here, affording charming vistas of further rooms, so devised that only small parts can be seen—an arrangement that is delightfully suggestive of mystery and extent. From this corner the service quarters branch off to the left, while the other main rooms are continued on the right. The service quarters are quite extensive, with pantries,



THE HALL—"TALBOT HOUSE," ESTATE OF TALBOT J. TAYLOR, ESQ., CEDARHURST, LONG ISLAND, N. Y.

of the main building is two stories in height, with a sloping roof; but on the right, as one approaches from the main entrance to the grounds, is a large porch sup-

* Previous articles in this series: "BILTMORE," THE ESTATE OF GEORGE W. VANDERBILT, ESQ., BILTMORE, N. C., February, 1903. "THE GARDEN AT 'GEORGIAN COURT,'" THE HOUSE OF GEORGE J. GOULD, ESQ., LAKEWOOD, N. J., August, 1903. "HARBOR HILL," THE ESTATE OF CLARENCE H. MACKAY, ESQ., ROSLYN, N. Y., September, 1903. "THE ORCHARD," THE COUNTRY SEAT OF JAMES LAWRENCE BREESE, ESQ., SOUTHAMPTON, N. Y., November, 1903. "THE RESIDENCE OF W. L. STOW, ESQ., ROSLYN, N. Y., December, 1904. "WHITE HALL," THE HOUSE OF HENRY M. FLAGLER, ESQ., PALM BEACH, FLA., January, 1904. "FAULKNER FARMS," THE ESTATE OF MRS. CHARLES F. SPRAGUE, BROOKLINE, MASS., March, 1904. "THE HOUSE OF E. J. BERWIND, ESQ., NEWPORT, R. I., April, 1904. "GREY CRAIG," THE ESTATE OF J. MITCHELL CLARK, ESQ., NEWPORT, R. I., May, 1904. "BLAIRSDEN," THE ESTATE OF C. LEDYARD BLAIR, ESQ., BERNARDSVILLE, N. J., June, 1904. "KILDYSART," THE COUNTRY SEAT OF DANIEL O'DAY, ESQ., DEAL BEACH, N. J., July, 1904. "THE ESTATE OF HENRY W. POOR, ESQ., TUXEDO, N. Y., August, 1904. "THE COUNTRY SEAT OF STANFORD WHITE, ESQ., ST. JAMES, L. I., N. Y., September, 1904. "DREAMWOLD," THE ESTATE OF THOMAS W. LAWSON, ESQ., EGYPT, MASS., October, 1904. "THE HOUSE OF HERMAN R. DURYEA, ESQ., OLD WESTBURY, N. Y., November, 1904. "THE HOUSE OF MRS. RICHARD GAMBRILL, NEWPORT, R. I., December, 1904. "MRS. A. CASS CANFIELD'S HOUSE, ROSLYN, N. Y., January, 1905. "THE HOUSE OF OGDEN MILLS, ESQ., STAATSBURG, N. Y., February, 1905. "BELLEFONTAINE," ESTATE OF GIRAUD FOSTER, ESQ., LENOX, MASS., March, 1905. "THE HOUSE OF LLOYD BRYCE, ROSLYN, N. Y., April, 1905. "MARTIN HALL," THE HOUSE OF JAMES E. MARTIN, ESQ., GREAT NECK, N. Y., May, 1905.

The staircase rises immediately to the right of the entrance door, and is continued above it, the level here being a few steps below that of the main floor. On one side is the fireplace, the stone facing of which supports a simple shelf. Flanking the fireplace stand two great bronze candelabra, a magnificently mounted stag head forming the single ornament of the panels above the mantelshelf. The hall contains some handsomely carved oak chests, and rich tables and chairs complete its furnishings. A beautiful rug is laid on the center of the dark stained floor.

To the right is the drawing-room, paneled in wood like the hall; but the design is distinctly richer, and the upper panels, above a molding, form a frieze of small squares, each beautifully carved. The ceiling is beamed, with plain white panels. The fireplace is a simple Tudor arch, cut in the stone facing; the arch is surmounted by a slender shelf, carried on carved supports, and with panels formed below it. Immediately opposite the entrance door is a large bay window, almost completely glazed, and opening on to the end porch, by which it is entirely surrounded. On each

kitchen, and servants' dining-room on the main floor; laundry below, and sleeping-room above.

The dining-room is distinctly gallery-like in plan, with two sides brilliantly lighted by wide groups of mullioned windows. The walls, almost white in color, are plastered, with slender, strip-like wood pilasters in the corners, angles, and other points of emphasis. The pilasters carry a narrow strip of wood, which serves as the cornice. The white ceiling is divided into great oblong panels by heavy beams, covered with a richly plastered decoration. The generous fireplace has a rare old frontispiece, richly carved in stone. The floor is laid in large blocks of black and white marble, and the curtains, which are partly spread upon it, are in beautiful dark mauve damask. The same material is used in the chair coverings, the heavily carved chairs and dining table being of quite unusual beauty. The sideboard, opposite the fireplace, is also beautifully carved. The doors on the two ends of the room are glazed in small squares. The radiators are placed within a wainscoted screen beneath the windows.

(Concluded on page 126.)



THE DRAWING-ROOM.



THE LIBRARY.

"TALBOT HOUSE," ESTATE OF TALBOT J. TAYLOR, ESQ., CEDARHURST, LONG ISLAND, N. Y.—See page 113.

MR. CHARLES A. RICH, ARCHITECT.



THE DINING-ROOM.



THE MAIN FRONT.

"TALBOT HOUSE," ESTATE OF TALBOT J. TAYLOR, ESQ., CEDARHURST, LONG ISLAND, N. Y.—See page 113.

MR. CHARLES A. RICH, ARCHITECT.



THE GARDEN, SHOWING THE GRASSED WALK WITH IVY BORDERS.

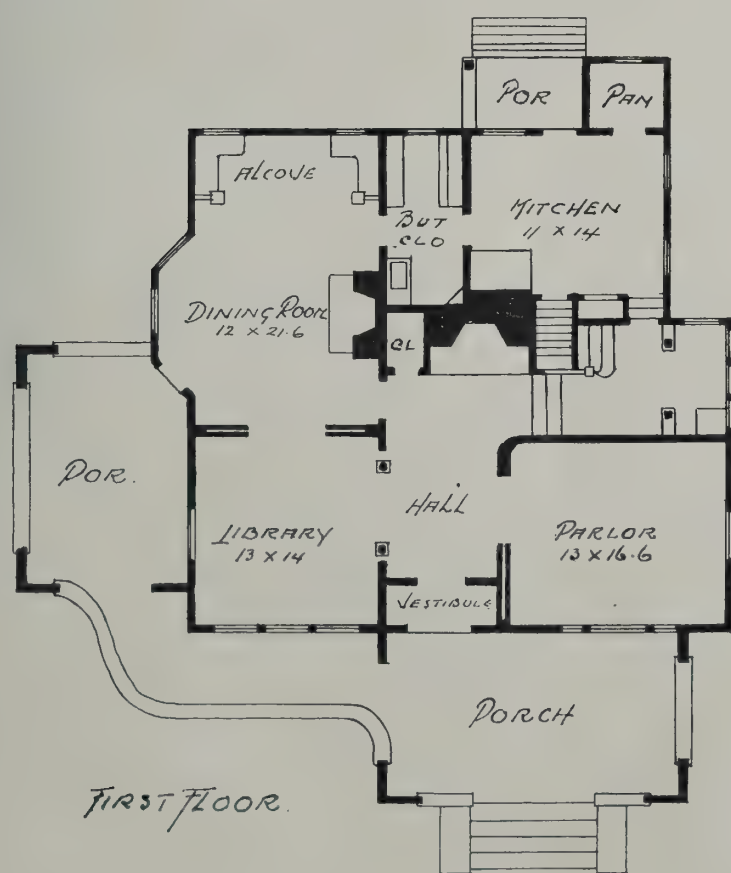


A QUIET RETREAT.



THE GARDEN.

"TALBOT HOUSE," ESTATE OF TALBOT J. TAYLOR, ESQ., CEDARHURST, LONG ISLAND, N. Y.—See page 113.
MR. CHARLES A. RICH, ARCHITECT.



A HOUSE AT MONTCLAIR, N. J.—See page 129.
MR. CHRISTOPHER MYERS, ARCHITECT.



"THE CEDARS," THE SUMMER HOME OF MRS. F. B. HARRINGTON, KENNEBUNKPORT, MAINE.—See page 129.
MR. HENRY PASTON CLARK, ARCHITECT.

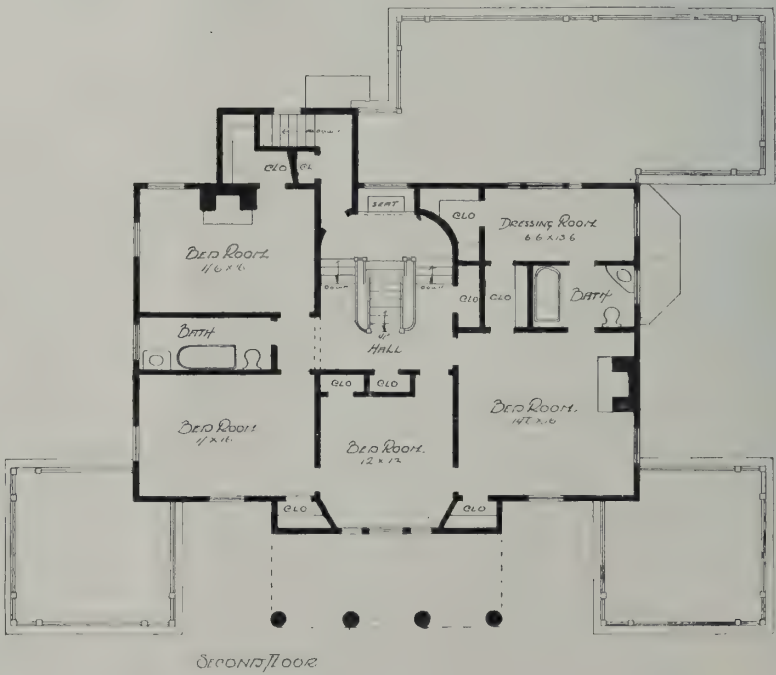
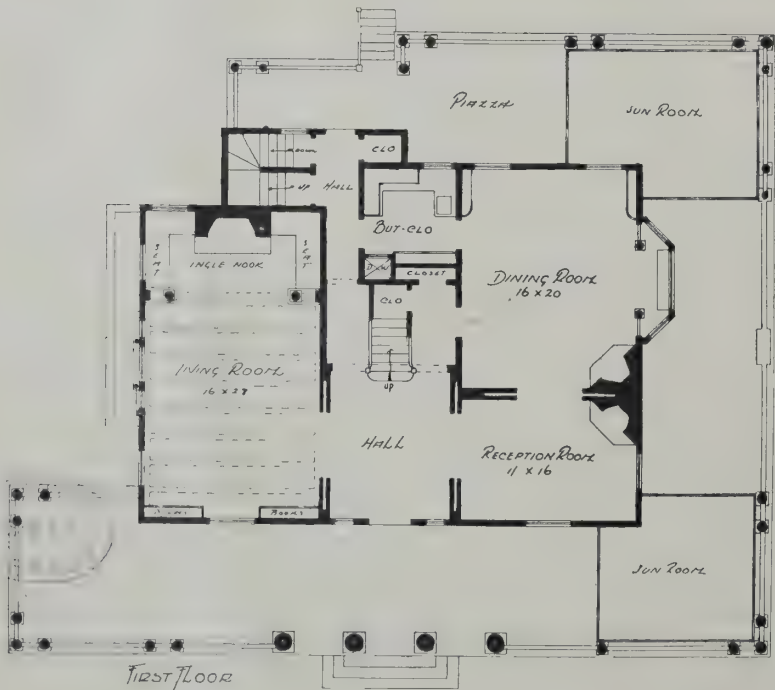


THE LIVING-ROOM.



THE DINING-ROOM.

"THE CEDARS," THE SUMMER HOME OF MRS. F. B. HARRINGTON, KENNEBUNKPORT, MAINE.—See page 129.
MR. HENRY PASTON CLARK, ARCHITECT.



A COLONIAL HOUSE AT BAYONNE, N. J.—See page 126.
MR. ARTHUR C. LONGYEAR, ARCHITECT.

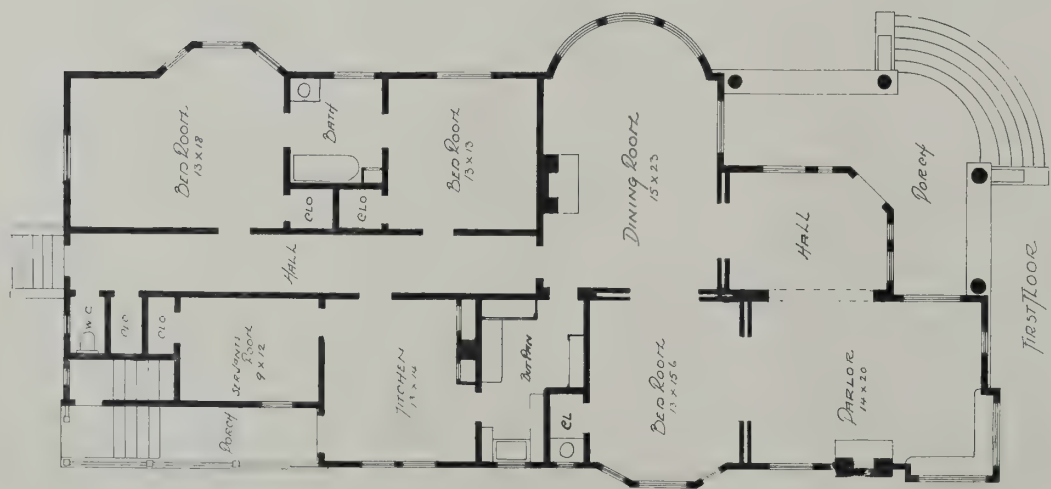


THE HALL.

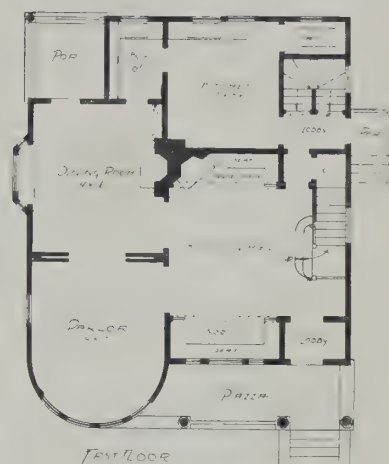


THE LIVING-ROOM.

A COLONIAL HOUSE AT BAYONNE, N. J.—See page 126.
MR. ARTHUR C. LONGYEAR, ARCHITECT.

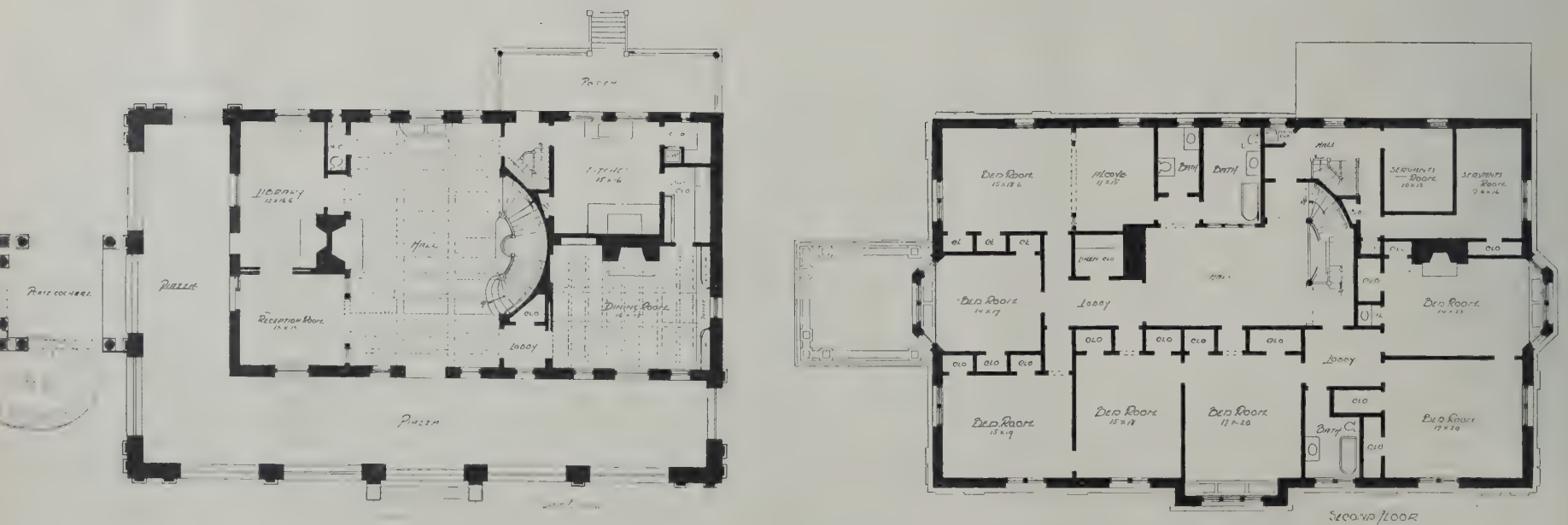


A ONE-STORY HOUSE AT SAN JOSE, CAL.—See page 127.
MESSRS. WOLFE AND MCKENZIE, ARCHITECTS.

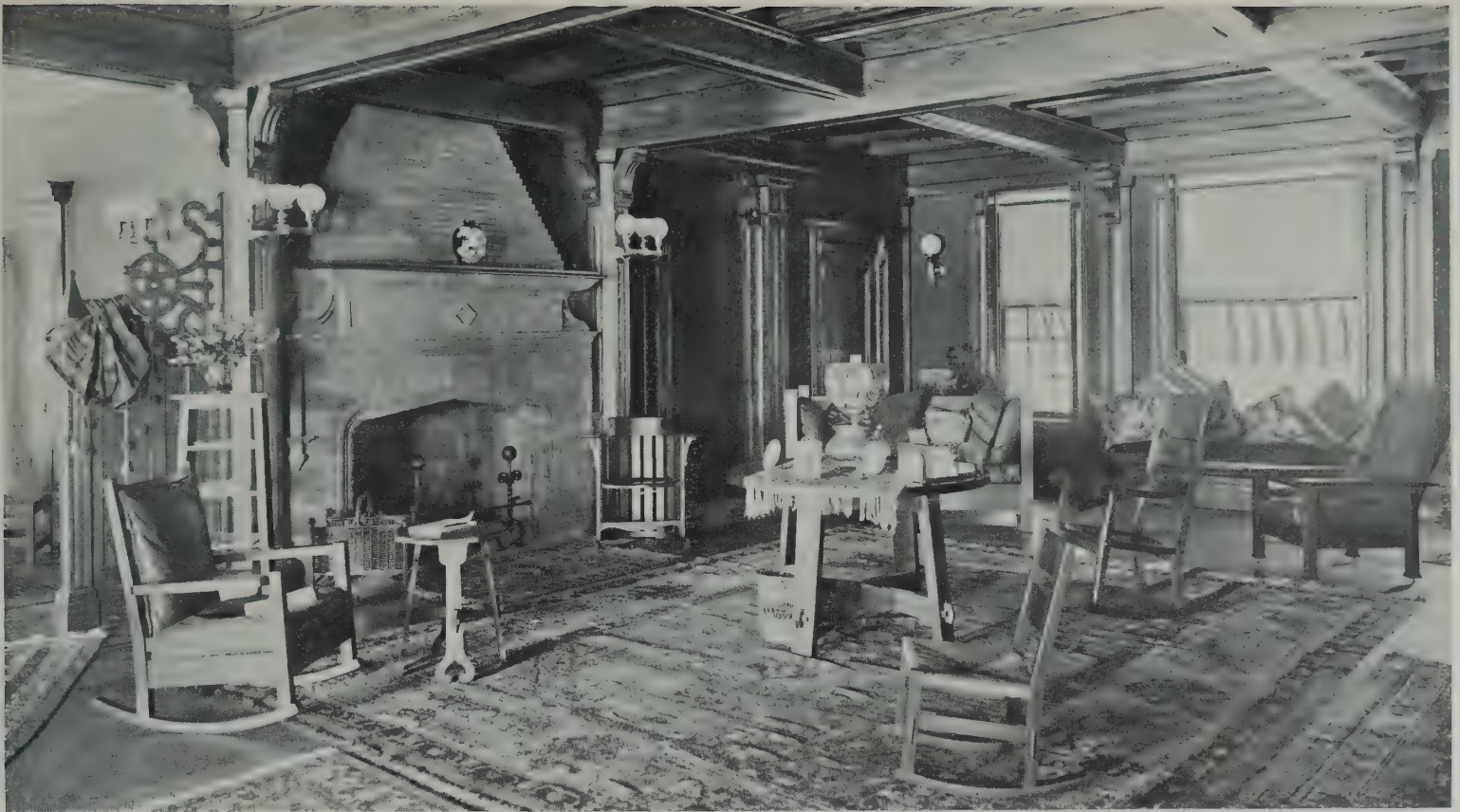


TWO MODERN DWELLINGS AT "ABBAY TERRACE," NEW BEDFORD, MASS.—See page 127.

MR. NATHANIEL C. SMITH, ARCHITECT.



RESIDENCE OF PETER FISHER, ESQ., ALLENHURST, N. J.—See page 128.
MR. G. KRAMER THOMPSON, ARCHITECT.



THE HALL, SHOWING FIREPLACE.



THE HALL, SHOWING STAIRCASE.



THE DINING-ROOM.

RESIDENCE OF PETER FISHER, ESQ., ALLENHURST, N. J.—See page 128.

MR. G. KRAMER THOMPSON, ARCHITECT.

**"TALBOT HOUSE," ESTATE OF TALBOT J. TAYLOR, ESQ.,
CEDARHURST, LONG ISLAND, N. Y.**

(Concluded from page 113.)

Beyond the dining-room is the superb library, which is of truly magnificent dimensions. It is the largest, the sunniest, the most cheerful room in the house, and the most interesting both in its decorations and in its situation. The doors from the dining-room open on to a balcony, below which is the library. The room is so very large that, without the increased height given by this unusual arrangement, it would have been too low. But the balcony is at once its most important and most ornamental feature. It is a broad passage, enclosed within piers and arches, with a pierced balustrade of intricate design. On the outer face the piers are ornamented with gables. To the left is a staircase to the upper floor. The delicate Tudor arches of the arcade are repeated as a wall pattern on the entrance wall, and the ceiling design, large squares containing circles, is identical with that of the rest of the room.

are lined throughout, both walls and ceilings, with oval or oblong panels. Red and white tapestries add very distinctly to the pleasant effect of these apartments.

The grounds surrounding "Talbot House" are quite large, although, as Cedarhurst is thronged with estates and summer homes, the absolute extent is, of course, somewhat limited. The outer buildings include an extensive stable and vast conservatories, while the squash court should not be overlooked. Beyond the lawn, below the end porch, is a beautiful enclosed garden, shut in with high hedges, and planted in good taste. The grounds, in fact, are thoroughly charming, and in keeping with the restrained design of the house. "Talbot House" is, in a very true sense, a beautiful country seat, homelike in its buildings, surrounded with grounds of great natural beauty, and expressive of the admirable and excellent taste that has brought this fine place to a beautiful and satisfying maturity.

which is separated from the main part of the room by a columned effect, contains an open fireplace with tiled facings and hearth, and a mantel with columns and Ionic capitals. Paneled seats are placed at each side of the fireplace, extending around the ends of the inglenook.

The dining-room is also trimmed with mahogany, and it has a paneled wainscoting, and buffets built in. The bay window has a columned effect with arch, and a paneled seat. The butler's pantry is fitted with all the best modern conveniences, including dumb waiter to the kitchen, dressers, sink, etc.

The rear hall and stairs are located conveniently, and the kitchen and its dependencies are located in the basement, and are trimmed and fitted with all the best modern fixtures. This basement contains also a laundry, heating apparatus, fuel rooms, cold storage, etc.

The second story is trimmed with cypress and treated with white enamel. It contains four bedrooms, fitted with large closets, and two bathrooms and a



THE LIVING-ROOM—A COLONIAL HOUSE AT BAYONNE, N. J.

The chief ornamental feature of the lower room is the vast chimney and inglenook. The great fireplace, like most of those in the house, is of quite rigid simplicity; but above it is richly paneled in carved wood. The spacious windows admit a flood of light, and the larger part of the walls is lined with bookcases, above which are a number of paintings hung against the dull gold with which the room is finished. There are wonderful space and comfort in this room, which, although located structurally at the very end of the house, is its real center and social head. It is a room that fills the visitor with joy and with envy, so spacious is it, so sunny, so full of charm.

The second story is wholly given up to bedrooms. They are of many shapes and sizes, with some quite unexpected combinations that are due to the irregularity of the plan. At the extreme left, over the drawing-room and porch, are Mr. and Mrs. Taylor's own rooms, three in number. The first is a boudoir, and from this the two bedrooms open. Both are alike in plan. They are lighted with dormers, which give the ceiling the inward shape of a gambrel roof, and they

A COLONIAL HOUSE AT BAYONNE, N. J.

THE house of Colonial treatment, which is illustrated on pages 120, 121, 127, and above, was erected for Howard M. Cook, Esq., at Bayonne, N. J. The building is designed with a portico at the front and two porches at the side. It has an attractive entrance and a broad doorway with windows on either side. The underpinning is built of buff brick laid in buff mortar. The exterior, above, is covered with clapboards, painted a deep Colonial yellow, while the trimmings are painted white. The roof is covered with shingles, and is stained a deep green color.

The hall, which is a central one, is trimmed with mahogany, and has a paneled wainscoting and an ornamental staircase, with oak treads and a mahogany rail and balusters.

The reception-room is trimmed with mahogany, and has an open fireplace, furnished with tiled facings and hearth and a mantel.

The living-room is also trimmed with mahogany, and it has a beamed ceiling, paneled wainscoting, and bookcases built in with latticed doors. The inglenook,

dressings room. The bathrooms are wainscoted with tile, and the floors are paved with the same, and each is furnished with porcelain fixtures and exposed nickel-plated plumbing. Two of the rooms have fireplaces, with tiled facings and hearths and mantels.

There is a billiard-room, which is fitted up in a unique manner, three bedrooms, and a trunkroom on the third floor.

Mr. Arthur C. Longyear, architect, 126 Liberty Street, New York.

THE HALL.

THE hall has so largely taken the place of the parlor, taken it with added advantage, with greater state, with ampler size, that both parlor and drawing-room can be permitted to completely disappear, except in houses of the largest size. In such dwellings they are quite unneeded unless large companies are entertained, or unless the value of a splendid suite is desired. But these are the exceptional houses, governed by no general rules, and available only for people of very large means.

TWO MODERN DWELLINGS AT "ABBEY TERRACE," NEW BEDFORD, MASS.

ON page 123 are illustrations of two modern dwellings which were erected for Dr. E. H. Abbe, in "Abbey Terrace," at New Bedford, Mass.

The description for the one illustrated at the top of the page is as follows: The underpinning is constructed of rock-faced bluestone. The superstructure of wood is covered on the exterior with clapboards and painted Colonial yellow, with white trimmings. The roof is covered with shingle and is stained a deep red.

The interior throughout is trimmed with cypress, and the doors are finished natural, while the trimmings are painted white. The entrance doors are of Dutch style. The reception hall is provided with two nooks, furnished with paneled seats, one of which has a fireplace built with Roman brick facings and hearth, and a mantel. The staircase is an ornamental one, with turned Colonial balusters, and cherry rails and newel. The parlor and dining-room are separated by double sliding doors, and the latter is provided with a bay-window and seat, and an open fireplace built with

is of wood, and the exterior framework is covered with shingles stained a silvery gray color. The trimmings are painted white, and the blinds are painted yellow. The roof is also covered with shingles and is stained red.

The interior throughout is trimmed with cypress. The doors are finished naturally, and the trimmings are painted white. The reception hall is central and contains a coat closet and a staircase with turned Colonial columns and cherry railing.

The living room contains an ingle nook provided with an open fireplace which is fitted with a tiled hearth and facings and a Colonial mantel. On either side of the fireplace there are paneled seats, over which there are windows of leaded glass. The dining-room contains an open fireplace treated with Roman brick facings and hearth and a mantel. The china closet is provided with leaded glass doors above the counter and cupboards beneath. The butler's pantry is fitted with china closets, drawers, sink, etc. The kitchen is provided with a pantry, lobby, large enough to admit ice box, sink, range, etc.

of good proportions and still maintain an artistic effect. It is quite natural that the building of a house of this character be of the elongated type, and on account of its succession of rooms, as in this particular case, great care has been taken in its treatment by the architects. In the planning of many California houses it is arranged, so far as is possible, to place all the sleeping and living-rooms on the south side of the house, to insure plenty of sunshine, and the parlor and kitchens on the north.

This house is of frame construction, having studded walls which are covered with matched sheathing on the exterior. This sheathing is furred out and is then covered with cement plaster with granulated surfaces, and is finished with a soft gray tone. The roofs are covered with shingles and are stained a brilliant red.

The interior is lathed and plastered, and the floors are doubled and highly polished throughout.

The hall is trimmed with quartered sawed oak, while the remainder of the interior is trimmed with white cedar.

The parlor, or living-room, is an attractive apartment



THE DINING-ROOM—A COLONIAL HOUSE AT BAYONNE, N. J.—See page 126.

Roman brick facings and hearth and a mantel. The butler's pantry is fitted with sink, drawers, dressers, and cupboards. The kitchen is provided with a sink, range, pantry, and all the modern conveniences. It also has a hall containing a stairway leading down to the cellar and up to the second and third stories.

The second floor contains four bedrooms, large closets, and a bathroom; the latter is wainscoted and furnished with porcelain fixtures and exposed nickel-plated plumbing.

The third floor contains the servants' quarters and ample storage room.

The floors are laid with quartered oak in the living-rooms, Alabama pine in the service quarters, and spruce in the bedrooms. The hardware is of brass and the door knobs are of old fashioned glass.

The cellar, cemented, contains a furnace, laundry, fuel rooms, and storage space.

Cost, \$4,100 complete.

The following is the description for the house at the bottom of the page: The underpinning is constructed of rock-faced bluestone. The remainder of the building

The second floor contains four bedrooms with large closets and a bathroom; the latter has enameled walls and ceiling, and is furnished with porcelain fixtures and exposed nickel-plated plumbing.

The third floor contains the servant quarters and ample storage room.

The floors are laid with quartered oak in the living-rooms, Alabama pine in the service quarters, and spruce in the bedrooms. The hardware is of brass and the door knobs of glass. The cellar, cemented, contains a furnace, laundry, fuel rooms, and cold storage.

Cost, \$4,100 complete.

Mr. Nathaniel C. Smith, architect, New Bedford, Mass.

A ONE-STORY HOUSE AT SAN JOSE, CAL.

AN interesting one-story house is illustrated on page 122. It was built for Mr. H. Bercovich, at Nagles Park Tract, San Jose, Cal.

It is a difficult matter in designing a one-story house to be able to secure a building with the combinations

with its pleasant bay window and paneled seats, and the open fireplace and mantel.

The dining-room has a semicircular bay window, which is so arranged as to give extra space to the room, and it also has an open fireplace.

The butler's pantry connects this dining-room with the kitchen, and it is fitted up with all the necessary cupboards, dressers, sink, closets, etc.

The kitchen is fitted up complete, and the servants' quarters are conveniently placed off this room, and both are isolated from the main house.

There are three bedrooms on this floor, each provided with well fitted closets, lavatories, etc., and a bathroom, which has a six-foot tiled wainscoting and a tiled floor, and is furnished with porcelain fixtures and exposed nickel-plated plumbing. There is a basement under the entire house, with the foundations of concrete, which contains the heating apparatus, fuel rooms, trunkroom, storage space, etc.

Cost, \$5,500 complete.

Messrs. Wolfe and McKenzie, architects, San Jose, Cal.



MISSION FURNITURE.

THE vogue of "Mission furniture" inspires the Western Architect to vigorous thought and utterance. Art in house furnishings never fares so hard in this country, it says, as when it tries to assume the virtue of honesty and avoid the appearance of deceit. Everybody whose memory runs back a third of a century will recall the dreadful shamming which overwhelmed the "Eastlake" movement, and a glimpse at the catalogues of "Mission" things now to be found at every turn—the catalogue—brings to mind the old horrors when sham wedge-pins and tenon ends were glued on almost any place for decorative purposes. Eastlake things went the way of all the world, not so much because they were ugly, or because they came to be made by people without anything genuine in their natures—such people as wave the flag and make a loud noise on state occasions and call their efforts patriotism—but because change of fashion ruled them out. Now one might well respect the founders of the Missions, who with crude tools and at plenty of cost of hard labor, made lumbering furniture that brought some degree of comfort to a simple, honest, hard life. If their chairs had legs two or three times too large, it is still easy to excuse the maker for doing a thing that he probably regretted at the time. The piece of mesquite that he must use could only be reduced to a proper size with his crude tools by an amount of labor which he could not spare from his other duties; so he cut it to his lengths and used it as it was, any notion of a vain display of profusion and indifference to cost of materials being farthest from his thoughts. He then framed and joined the work as well as the limitations of his tools, his skill and time permitted, and, while he rested, thanked God for what he had done and what he had taught his followers to do. One might take honest pleasure in having a bit of furnishing that came from such sturdy hands, but when it comes to most of the latter-day stuff that is advertised as Spanish Mission furniture, stuff that is ground out by modern machinery and put together without intelligence, stuff in which structural skill is conspicuously absent, and silly profusion of material and sham constructive details most prominent, we submit that the degree of simplicity that with indifferent success it retains ought not to save it. Yet, despite the fact that most of this stuff is lacking in all the qualities of quaintness and sturdiness that distinguished the originals, it will probably have its vogue until fashion decrees its undoing.

WOODS FOR FURNITURE.

SOME of the best cabinetmakers of New York are chary of working in oak, says the Sun. Really old and well seasoned oak is hard to get and harder to work. There is no great quantity of old oak furniture in the market, and old pieces that would supply large enough lumber for important work are seldom found. New kiln-dried oak is uncertain, being liable to warp and crack. Paneled articles can be made of such material with some safety, but large, solid articles are likely to give a bad account of themselves at the end of a winter in a steam heated house. Rosewood also the best cabinetmakers distrust. This wood has a peculiarly oily quality that makes it uncertain when glued. For this reason rosewood is used chiefly as a veneer. Thin sheets lose much of their oil and take glue satisfactorily. Native walnut is no longer a favorite with the cabinetmakers. This wood was in effect exhausted a quarter of a century ago or more, and it is now as expensive as mahogany and by no means so beautiful. French walnut is still used for gun stocks because of its relative lightness, durability and beauty. Circassian walnut is also imported and used much in interior decoration.

Chestnut is a good deal prized for wainscoting and doors. It is sometimes put up in the rough with good effect, and sometimes oiled and polished, when it is remarkably beautiful, considering the cost. Gulf cypress is used with great effect in like fashion, and when filled and oiled it makes one of the most beautiful of woods for inexpensive interior decoration. Cherry was the old substitute for mahogany, and it is still a favorite wood with the furniture makers. It is, however, not easily obtained in a properly seasoned condition, for proper seasoning makes it expensive. Mahogany is the favorite wood with the best cabinet makers. There is a vast amount of seasoned mahogany to be had from ruinous old articles made in the last century when the rage for mahogany was well developed; and while the new mahogany is less beautiful than the old, purchasers of furniture seem to have learned that it is worth while to have the new wood well seasoned.

THE RESIDENCE OF PETER FISHER, ESQ.,
ALLENHURST, N. J.

BY FRANCIS DURANDO NICHOLS.

OF all the types of private dwellings being built in this country, there is none which presents more features of interest than the semi-suburban residence erected in the vicinity of New York.

The suburban house is interesting and typical, and the one recently completed for Peter Fisher, Esq., at Allenhurst, N. J., and illustrated on pages 124 and 125, is characteristic of this type.

The house is situated on two thoroughfares, and therefore required a special treatment, for all the elevations are exposed to view.

To make a large house look well, and to provide it with a generous number of rooms, within the limited property lines of a suburb, is an enigma to which an architect's task is frequently reduced, but, fortunately, Mr. G. Kramer Thompson, the architect of this particular house, has been most successful in producing an imposing and dignified building which meets all the necessary requirements, as the illustrations present.

The site upon which it is erected is square in form, and the plan adopted was necessarily along these lines. The building is designed in the Elizabethan style, and is constructed of brick and terra cotta. It has repressed red brick stretchers with one-half inch deep cut joints; the terra cotta is of a light cream color. The roof is covered with red slate, and all the metal work is of heavy copper.

The interior arrangement of the rooms on the first floor gives opportunity for generous entertainment; and at the same time it affords privacy and isolation to the individual members of the family.

The hall, which is now made the important factor of all country and semi-suburban houses, is square and spacious, and is fitted up as a living-room. The woodwork is of black oak. This hall has a paneled wainscoting and a massive beamed ceiling. The staircase, though rising out of this room, does not play an important part, as is usually the case, but is conveniently placed, and is artistically screened from view, so far as it is possible to do so. The open fireplace is built with brick facings and hearth, the former rising to the ceiling.

The reception-room and library are trimmed with cherry, and each has tapestry covered walls, and ornamental plaster ceilings. The library is furnished with a paneled seat and an open fireplace built of brick, with a mantel of Gothic style.

To the right of the entrance, and facing the avenue, is placed the dining-room. This room is trimmed with butternut, and it has a high-paneled wainscoting finished with a platé-rack, above which the walls are covered with a golden brown burlap, and the whole finished with a massive wooden cornice. The ceiling is heavily beamed.

Due consideration has been given to the placing of the dining-room, and, while it does not require the important attention shown to the dining-room of a smaller establishment, it has been well located with a view as to its outlook, and the purpose for which it is intended. The room is of large dimensions, and it contains an open fireplace built of Roman brick, with the facings and a hearth of similar brick, and a mantel-shelf supported on corbeled brackets. There is also a china closet built in with leaded glass doors, and a buffet, which extends across the entire end of the room, provided with china cabinets, etc.

The kitchen and its dependencies are placed at the far end of the house, and as far from either highway as is possible, and each is furnished with all the best modern conveniences.

On the second floor there are as many as seven chambers, with their woodwork painted white, and each fitted with a large closet. There are also on this floor three bathrooms, which are wainscoted and paved with tile. Each is furnished with porcelain fixtures and exposed nickel-plated plumbing. There are also two servants' bedrooms, with a private hall and stairway.

The third floor is trimmed with cypress, and it affords ample guest rooms to the number of seven, besides two bathrooms.

The servants' bath, heating apparatus, fuel rooms, laundry, and cold storage room, are located in the cellar.

Mr. G. Kramer Thompson, architect, 66 Broadway, New York.

IN building a home, arrangements should be made for the time when the children will be grown up. The needs of an adult family are very different from those of a family of small children. It may, perhaps, not be practical always to look forward to these later years, yet the wise home builder will keep them in mind, and prepare for them as best he may.

A good house helps to good living, just as a well-built house saves costs of repairs, and a well-equipped house aids life.



THE GARDEN MONTH BY MONTH—JUNE.

THE first of June finds the flower garden practically planted. Cannas and salvias should be in the ground by the first of the month, and both cannas and dahlias should be well watered in dry periods. All bedding stock and sub-tropical plants should be planted by the first of the month.

And then the work of care begins. May is the month of planting and June the month of weeding. No flower lover needs to be warned against weeds, but it is well to be reminded that if the weeds are not pulled up by their roots when young, they will work irremediable harm, both in stunting the growth of the young plants and in extracting the nourishment from the soil. Weeding is never a cheerful task, but it is absolutely unavoidable and entirely essential. Insects must be looked after and killed, for, if a start is once gained, it will be extremely difficult to keep them down.

When the plants begin to bloom cut off the flowers as soon as they begin to fade. This is necessary if free blooming throughout the summer is desired—and for what other purpose does a garden exist? Patience is needed even for this simple operation, but the results, if the garden has been well made and is well tended, will more than compensate for every effort put forth.

FLOWERS IN JUNE.

ACONITUM (Monkshood). Alstromeria (Peruvian Lily). Anchusa. Anthemis. Anthericum (St. Bruno's Lily). Aquilegia. Armeria. Arum. Astragalus (Milk Vetch). Baptisia. Bellis. Bupthalmum. Callirrhoe. Campanula. Cassia. Catalpa. Centaurea. Centranthus. Coreopsis. Cornus (Dogwood). Coronilla. Delphinium. Deutzia gracilis. Deutzia (Pride of Rochester). Digitalis. Doronicum. Dracocephalum. Erigeron. Heuchera. Hollyhock. Honeysuckle. Hydrangea (Climbing). Iris. Jasminum. Laburnum. Lathyrus (Everlasting Pea). Lilium Canadense. Lilium candidum. Lilium longiflorum. Linden. Locust. Lychnis Chalcedonica. Lychnis coronaria. Lychnis gigantea. Magnolia. Monarda. Mountain Ash. Papaver (Poppy). Pentstemon. Philadelphus. Potentilla. Pyrethrum. Ranunculus. Rhododendron. Rose. Salpiglossis. Schizanthus. Sedum. Spiraea. Sweet Alyssum. Sweet Peas. Sweet Scabiosa. Sweet Sultan. Veronica. Vinca. Violets.—I. D. Bennett.

GARDEN MAKING.

MOST part of our small gardens, says a recent writer, seem to lack just the one touch of regularity which is in accord with the house—in most cases a compact, low hedge or a breadth of grass—touches which an architect should be able, from the nature of his training, to impart; for when once the gardener is started upon right lines, he can maintain it, but the ambitions of the modern gardener are too much centered upon and too much measured by his abilities to compete in the flower-show exhibitions. Special stress should be laid upon one very important branch of the subject of laying out grounds, viz., the trees and plantations, the most important essential in imparting character and local color to the environment of a home. At no time, if the scheme is to be successful, can we divorce the house and, in the strict force of the word, the gardens from the surroundings; all must be viewed together in unity. When there is perfect freedom of choice, the three great considerations in deciding upon the site and position of the house are: climatic conditions, that is, whether the pervading character of the air is humid or dry; the nature of the subsoil, whether sandy, gravelly, or clay; and the aspect, for no matter what the prospects offer, it is unwise to build upon the north, northwest, or northeast side of a hill or knoll. The nature of the subsoil is a point which needs more than ordinary caution. Beds of clay, though perhaps not so unhealthy, are cold and disagreeable, and difficult to drain by the natural process of filtration. For healthy beauty, luxuriance, and ultimate cheapness, select a site with understratum of gravel or marl, and a good surface covering of loam. With regard to surface soil for a flower bed, it is a good plan to lay at a depth of about two feet a layer of broken bricks, then to overlay this with a covering of ashes, and then about twenty-one inches of soil of desirable lightness; for trees and shrubs a depth of one foot six inches or two feet, with a plentiful admixture of fibrous turf loam. Grass also requires a depth of soil not less than eight inches, with a well-drained bottom properly prepared.

Fifty Suggestions for the House

22. THE CARE OF FIREPLACES.

A good fireplace is a precious possession in a house, and deserves to be cared for. In brick fireplaces, the bricks at the back, where most exposed to the fire, crack and slowly crumble away; but they can be replaced by new ones without much difficulty. Iron linings, if too thin, are apt to warp, but, if they have been well backed up with bricks and mortar, the warping may not affect the usefulness of the fireplace. Tile linings are, as a rule, meant only for show, and are incapable of resisting fire; but the soapstone linings once popular are quite durable.—T. M. Clarke.

23. STAIR PROPORTIONS.

THE "rise" of a stair is the height from the top of one step to the top of the next. The "total rise" is the height from floor to floor. The "run" is the horizontal distance from the face of one riser to the face of the next. "Risers" are the upright boards forming the face of the steps, and the "treads" are the horizontal boards on which the feet tread. Treads are usually from one and a quarter to one and three-quarters inches wider than the run, on account of the nosing. The "rise" of any stairs is found by dividing the "total rise" by the number of risers. The "run" of the stairs may be fixed at will unless the space is cramped, but to secure a comfortable stair the run must bear a certain relation to the rise. For ordinary use a rise of seven to seven and a half inches makes a very comfortable stair. In schools and for stairs used by children the rise should not exceed six inches. Stairs having a rise greater than seven and three-quarters inches are steep. The width of the run should be determined by the height of the rise; the less the rise, the greater should be the run, and vice versa. Several rules have been given for proportioning the run to the rise, viz.: (1) the sum of the rise and run should be equal to from seventeen to seventeen and one-half inches; (2) the sum of two risers and a tread should not be less than twenty-four nor more than twenty-five inches; (3), the product of the rise and run shall not be less than seventy or more than seventy-five. These rules apply only to stairs with nosings. Stone stairs without nosings should have at least twelve inch treads to be comfortable for adults.—Frank E. Kidder.

24. RURAL CESSPOOLS.

WHERE the soil permits and the amount of space is sufficient, the cesspool may be constructed so as to allow the fluid portion of the sewage to drain away at once. Where no wells are near enough to be affected by this process the cesspool may operate for a long time without being cleaned out. Where the nature of the soil does not permit this mode of disposal of the fluid portion of the sewage, or where there is danger of infecting neighboring wells, the cesspool should be so constructed as to be impervious. Under these conditions it will require frequent cleansing, the contents removed serving as fertilizer.—Dr. D. H. Burgey.

25. THE BEDROOM FLOOR.

THE smaller the bedroom, the greater the need for a bare floor and rugs. It is impossible to keep the room clean in any other way. An apartment, it must be remembered, is not like a house, which has as many halls as there are stories. There is no place for the bedroom furniture when you clean, unless you fill your one thoroughfare with it. You can not sweep your carpet without moving your furniture, but you may have a rug shaken and a floor washed without any great upheaval. Mattings tear easily, and should not be used in a room where a bed to be made must be drawn out from the wall. The bare floor is not injured by the moving of furniture. Its scratches can be concealed by a rug.—Lillie Hamilton French.

FEW artistic qualities are so important as refinement. There is often a barbaric splendor, a rush and swirl in bold lines and coarse ornament, when the scale is large, the motif free, the application grandiose; but for domestic work of all kinds the refined ornament, refined lines, refined models give the keynote of success every time. And this is quite as true of form and of dimensions as of ornament, applied or structural. A refined piece of work, delicate, studied, carefully made, admirably fitted to its use, perfectly composed, has merits that the most grandiose conception, no matter how well done, will fail to equal. It is goodness that counts in art.

"THE CEDARS," THE SUMMER HOME OF MRS. F. B. HARRINGTON, KENNEBUNKPORT, MAINE.

THE summer home of Mrs. F. B. Harrington, at Kennebunkport, Maine, is the subject of the illustrations on pages 118 and 119. The house has the entrance at the side, so that all the rooms, so far as is possible, may have a view of the ocean. It is placed among a clump of cedars, from which it derives its name—"The Cedars."

There is no cellar under the house, and it rests upon cedar posts with stone footings. The exterior, from the grade to the peak, is covered with shingles, which are stained a dull brown color, soft in tone, while the trimmings are painted white. The roof is also shingled, and stained a dull green color. The latticed windows and transoms are interesting features of the exterior, and so is the chimney. The gambrel roof further carries out the easy sweeping lines of the house, nearly doubling the proportion of the whole.

A study of the plans shows an admirable scheme. The little den, near the entrance, where the business of the house can be carried on, a large living-room, a dining-room and kitchen form the combination of the first story. The den is trimmed with cypress, stained a Flemish brown, and harmonizes well with the crimson burlap on the walls.

The hall is treated in a similar manner and has a beamed ceiling, and an ornamental staircase, with square balusters and newel posts. The ample living-room is also trimmed with cypress, and is stained and finished in a forest green. Its comfortable fireplace, built of pressed buff brick and terra cotta, and its cozy nooks, with its books and seats, form an ideal place to stay when the cold storms blow in from the Atlantic. The walls of this room are paneled and the ceiling is beamed.

The dining-room is trimmed with cypress, finished with Flemish brown. It is furnished with a paneled wainscoting to the height of seven feet, and finished with a plate rack, above which the walls are covered with a decoration of greenish tones; the ceiling is beamed. There is an open fireplace built of pressed brick, with the facings and a hearth of similar brick and a mantel. The butler's pantry is fitted up with a copper sink, drawers, dressers, etc.

The kitchen is fitted with all the best modern conveniences. It has a range, sink, large store-pantry, and a laundry well fitted up. Off the laundry there is a servants' bathroom, fitted complete. The rear porch contains a coal and wood bin.

The second floor is trimmed with natural cypress, and it contains five bedrooms with large closets, and two bathrooms; the latter are furnished with porcelain fixtures and exposed nickel-plated plumbing.

The third floor contains the servants' quarters, and ample storage space.

Mr. Henry Paston Clark, architect, Studio Building, 110 Tremont Street, Boston, Mass.

A HOUSE AT MONTCLAIR, N. J.

ON page 117 will be found an illustration of a house erected for F. J. Drescher, Esq., at Montclair, N. J.

The underpinning is built of field stone laid up at random. The exterior framework is covered with matched sheathing, and the whole is overlaid with shingles, which are stained a soft brown color, while the trimmings are painted an ivory white. The roof is also covered with shingles and is painted red.

The hall is trimmed with quartered oak, and it has a five-foot paneled wainscoting, above which the walls are covered with crimson burlap and the whole finished with a wooden cornice. This hall also contains an open fireplace, with tiled facings and hearth and a mantel, and an ornamental staircase, with broad landings, etc.

The parlor is treated with white enamel trim. The library is separated from the hall by an archway.

The dining-room is trimmed with quartered oak, and is has a paneled wainscoting five feet in height, an open fireplace built of Pompeian brick, with the facings and hearth of the same, and a mantel of Colonial style. The alcove at the end of the room has a separation, with a column effect and paneled seats.

The butler's pantry is fitted with all the necessary sinks, closets, and dressers. The kitchen is provided with all the best modern conveniences.

The second story contains three bedrooms, a sitting-room, sun parlor, and a bathroom. The sitting-room is connected with the sun parlor, and it has an open fireplace of brick, with the facings and a hearth of the same, and a mantel. The woodwork on this floor is trimmed with whitewood, which is stained, except the hall, which is of quartered white oak. The bathroom is wainscoted and paved with tile, and it contains porcelain fixtures and exposed nickel-plated plumbing.

There are two bedrooms, bathroom and ample storage room on the third floor. This floor is trimmed with whitewood. A cemented cellar contains a laundry, furnace, fuel rooms, and storage space.

Cost, \$9,000 complete.

Mr. Christopher Myers, architect, 460 Bloomfield Avenue, Montclair, N. J.

New Books

THE FIRST BOOK OF FARMING.

THE FIRST BOOK OF FARMING. By Charles L. Goodrich. New York: Doubleday, Page & Co. 1905. Pp. 20 + 259. Price, \$1 net.

FARMING is probably the most unlikely art to be learned from a text book. Yet the appearance of an elemental treatise on the art of farming is not without significance. Only a few years since, the teaching of cookery and domestic arts by rule of thumb was the universal rule; to-day, every cook has her cook-book, and the science of housekeeping is extolled in many volumes and maintained in numerous periodicals. That farm work should be similarly treated, its routine scheduled, its methods systematized, is entirely in keeping with the tendency of the day.

No class of producers suffers more from a lack of knowledge and of ignorance of scientific conditions than the farmer. Born and bred on the farm, he has learned his trade by intuition and by practical experience. If his father or the man he works for is a good farmer, he acquires more or less excellent practical knowledge. If his preceptor is a bad farmer, he readily improves on the original. That he could learn from books, that a man who writes could tell him more than he himself has gained by using the spade or behind the plow is an idea that, to him, is very new.

Yet he follows a most important and a most laborious profession. He works early and late at one of the most exhausting of occupations. His calling is dependent on conditions wholly beyond his control and absolutely above human control. If the season is favorable to crops, he will gather rich harvests; if drought or other natural disaster sets in, ruin faces him in grim certainty. Even an abundant year may not mean a good money year, for abundant crops mean, in many cases, low prices, while in scarce years prices are apt to rise.

These are but the common and every-day experience of the farmer, yet they show how hazardous is his calling, and how wise it would be for him to fortify himself with all available knowledge. Practical difficulties immediately present themselves when such remedies are sought; the farmer does not naturally take to books, for his education is limited, and he often fails to understand the value of reading. A second, and perhaps more important obstacle, is that farming has scarcely been systemized, and able, helpful handbooks are few.

It is to supply this want, and, more especially, to help our farmers by telling them what to do and how to do it, pointing out what to avoid, and explaining the fundamental principles underlying his calling, that Mr. Goodrich has prepared his First Book of Farming. It is intended to give the beginner, be he old or young, a fundamental knowledge of how to conduct a farm with the least expense and obtain the largest return. It is also intended as a text book for class room use. It might have been wiser to have discarded this double purpose, for the needs of the farmer differ widely from those of the student in the schools; yet both will find in this book a mass of useful knowledge of great practical and theoretical utility, brought together by a skilled observer of wide personal experience.

The larger part of the book is, indeed, theoretical, and much space is given to experiments and other interesting diversions for which the average farmer will have little time; but it covers the whole subject of plant and soil problems so far as they affect the farmer, and thus constitutes a very admirable addition to the long list of nature books now coming from the presses of the leading publishers. It is a book from which every one concerned with farming, the student, the amateur beginner, and the old hand at the business, will gain much helpful, valuable, practical knowledge, and more than this can not be expected of any book. Published at a low price, illustrated with photographs of a thoroughly interesting character, it is a volume that can be warmly commended.

ARCHITECTURE FOR THE HOME BUILDER.

HISTORIC ARCHITECTURE FOR THE HOME BUILDER. By Walter J. Keith. Minneapolis: The Keith Co. 1905. Pp. 264.

THIS little sketch of the history of architecture is intended for the use of any one having an interest in building but who may know nothing of the historic styles. The author disarms criticism by the modesty of his preface. The book makes no pretense to archeological value, and the space it occupies is so small that only the barest outlines of architectural history are given.

New Building Patents

The following list of New Patents relating to Building and Sanitary Science is prepared expressly for the SCIENTIFIC AMERICAN BUILDING MONTHLY by MUNN & Co., Solicitors of American and Foreign Patents.

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BRICK, STONE AND TILE

BUILDING BLOCK.	C. J. W. Hayes, Detroit, Mich.	786,762
April 4		
BUILDING BLOCK.	W. J. Faulkner, Chicago, Ill.	786,884
April 11		
BUILDING BLOCK.	J. H. Jones, Fostoria, Ohio.	786,971
April 11		
BUILDING BLOCKS.	D. W. Lloyd, Pittsburg, Pa.	787,199
April 11		
BUILDING TILE.	A. Pfeiffer, Chicago, Ill.	787,215
April 11		
ROOFING TILE.	L. G. Sharp, Chicago, Ill.	787,474
April 18		
ROOFING SHINGLE.	L. G. Sharp, Chicago, Ill.	787,475
April 18		
CONCRETE BUILDING BLOCK.	G. L. Peabody, Pittsburg, Pa.	787,787
April 18		
BUILDING BLOCK.	J. Schall, Evergreen Park, Ill.	788,283
April 25		
CONCRETE BUILDING BLOCK AND WALL.	C. A. Meyers, Leipsic, Ohio.	788,366
April 25		
INTERLOCKING BUILDING BLOCK.	J. Schall, Evergreen Park, Ill.	788,430
April 25		

CARPENTRY.

WINDOW.	A. Konsalik, Philadelphia, Pa.	786,650
April 4		
WEATHER STRIP.	H. E. Kenny, Detroit, Mich.	786,972
April 11		
HORIZONTALLY PIVOTED WINDOW.	H. B. Hiteshew, Pittsburg, Pa.	787,378
April 18		
METHOD OF UNITING WOODWORK.	W. J. Boda, Dayton, Ohio.	787,429
April 18		

CONSTRUCTION.

CONCRETE BEAM PROTECTION.	A. L. A. Himmelwright, New York, N. Y.	786,289
April 4		
WALL CONSTRUCTION.	W. L. Marchand, Rolla, N. D.	786,370
April 4		
COMBINATION COLUMN SUPPORT AND SILL FASTENER.	D. F. Hutton, Piper, Kans.	786,497
April 4		
BUILDING BLOCK WALL CONSTRUCTION.	W. Porten, St. Paul, Minn.	786,598
April 4		
FORM FOR CONSTRUCTING CONCRETE STEEL COLUMNS.	L. F. Brayton, St. Paul, Minn.	786,622
April 4		
LINTEL CONSTRUCTION.	J. Kahn, Detroit, Mich.	786,820
April 11		
PARTITION CONSTRUCTION.	R. Markgraf, Kansas City, Mo.	786,826
April 11		
STORE FRONT.	M. Salomon, Chicago, Ill.	787,053
April 11		
CHIMNEY, AND LINING THEREOF.	J. M. Bragg, East Hartford, Conn.	787,267
April 11		
BUILDING CONCRETE WALLS.	R. and W. C. Deeds, Cuyahoga Falls, Ohio.	787,665
April 18		
COLUMN.	R. Hegener, Chicago, Ill.	788,153
April 25		
STAVED COLUMN, SHAFT, ETC.	H. S. Corrow, Asbury Park, N. J.	788,189
April 25		
ROOFING AND SIDING MATERIAL.	F. D. Jacobs, Northampton, Mass.	788,358
April 25		
PORTABLE HOUSE.	G. N. White, Colorado Springs, Col.	788,445
April 25		

ELEVATORS.

ELEVATOR GATE.	W. N. Phillimore, Philadelphia, Pa.	786,311
April 4		

FIREPROOFING AND FIRE EXTINGUISHMENT.

FIRE DOOR.	E. Ohnstrand, Jamestown, N. Y.	786,593
April 4		
LATCHING DEVICE FOR SAFETY EXIT DOORS.	G. E. Redden, New York, N. Y.	786,680
April 4		
FIRE EXTINGUISHING SYSTEM.	P. Evans, Philadelphia, Pa.	786,742
April 4		
BURGLAR AND FIRE ALARM.	Giles and Ramsey, Mammoth, W. Va.	787,372
April 18		
FIRE EXTINGUISHING SYSTEM.	Fiddes and Watt, Aberdeen, Scotland.	787,505
April 18		
FIREPROOF CONSTRUCTION AND METHOD OF MAKING SAME.	A. L. A. Himmelwright, New York, N. Y.	787,512
April 18		
FIREPROOF WINDOW.	A. Konsalik, Philadelphia, Pa.	788,267
April 25		
FIRE ALARM AND FIRE EXTINGUISHING APPARATUS.	J. Hartley, Philadelphia, Pa.	788,152
April 25		

HARDWARE.

SASH BALANCE AND FASTENER.	W. H. Gardner, Park City, Utah.	786,434
April 4		
DOOR STOP.	Moran and Johnson, McKees Rocks, Pa.	786,585
April 4		
HINGE.	R. W. Hubbard, Ashtabula, Ohio.	787,514
April 18		
COMBINATION DOOR KNOB, DOOR BELL, AND BURGLAR ALARM.	E. Stewart, Kansas City, Mo.	787,996
April 18		
SPRING HINGE.	H. J. Valentine, Cleveland, Ohio.	787,999
April 25		

HEATING AND VENTILATION.

FIREPLACE HEATER.	Bacon and McGarrigal, Paducah, Ky.	786,713
April 4		
RADIATOR.	J. H. Flaherty, Cleveland, Ohio.	786,886
April 11		
VENTILATOR.	S. D. Hanney, Chicago, Ill.	787,377
April 18		
HEATING SYSTEM.	Q. N. Evans, New York, N. Y.	787,617
April 18		
HEATING SYSTEM.	E. Glantzberg, Springfield, Mass.	787,748
April 18		
SHEET METAL RADIATOR.	W. R. Kinnear, New York, N. Y.	787,845
April 18		
VENTILATOR.	S. H. Jacobson, New York, N. Y.	787,882
April 18		
FRESH AIR INLET FOR SANITARY VENTILATION, ETC.	G. Cody, Flushing, N. Y.	12,338
April 18		
WINDOW SASH VENTILATOR.	F. Kling, Blandensville, Ill.	788,052
April 25		
DOMESTIC WATER HEATER AND TANK SYSTEM.	J. J. Blackmore, Brooklyn, N. Y.	788,089
April 25		

MISCELLANEOUS.

PAINT.	L. A. Dreyfus, New Brighton, N. Y.	786,348
April 4		
ROOF SCAFFOLD.	S. C. Johnson, De Kalb, Ill.	786,499
April 4		
SCAFFOLDING.	A. Tingleaf, Altona, Ill.	787,233
April 11		

PLUMBING.

DOMESTIC SINK.	J. H. Doyle, New Orleans, La.	786,738
April 4		
WATER CLOSET.	C. Pfaw, Cincinnati, Ohio.	787,110
April 11		
PASIN.	W. Mattingly, Texarkana, Ark.	787,202
April 11		
WATER CLOSET BOWL.	M. D. Heffrich, Evansville, Ind.	787,755
April 18		
FLUSHING OUTFIT FOR CLOSETS.	T. F. Cray, Middleport, Ohio.	787,833
April 18		

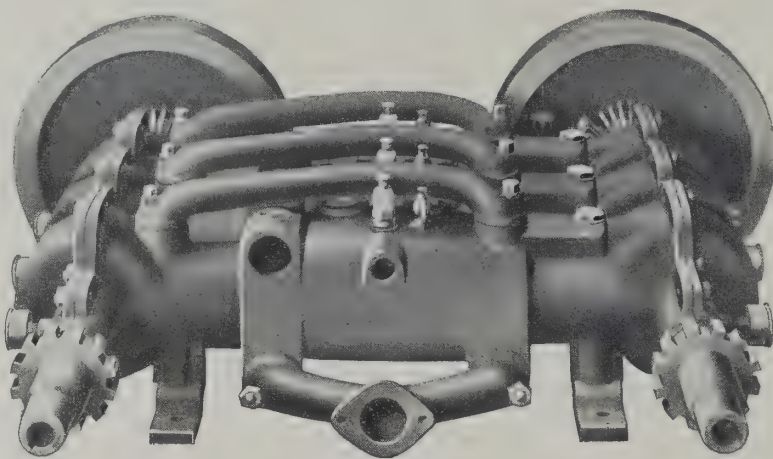
TOOLS.

ADJUSTABLE SHINGLE GAGE.	A. Anderson, Bellingham, Wash.	786,710
April 4		
SCRIBING TOOL FOR CARPENTERS.	D. M. Barnett, Melbourne, Australia.	787,142
April 11		
SQUARE.	G. L. Wilson, Chicago, Ill.	787,248
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April 18		
CARPENTER'S SQUARE.	J. R. Simpson, Chicago, Ill.	788,223
April 25		

Publishers' Department

MOTORS FOR MARINE WORK.

WHAT is claimed to be a new departure in gasoline engine construction is furnished by the Van Auken motor for marine work, and it is automatic, self-starting, noiseless; has perfect balance and twin screw propulsion. The motor is entirely original and unique in many respects, there being nothing like it on the market in the marine line. The most salient features include: its lying low in a boat, no dirty oiling, total absence of vibration, propeller wheels run-



GASOLINE MARINE MOTOR.

ning in opposite directions driving the boat in perfectly straight alignment, placing the motor under the decks or floor or in any position desired to be out of the way, and the elimination of valves, cams, rods and other troublesome accessories. So far, the experience gained in its working shows that the mechanism gives no indications of liability to get out of order or adjustment, and it is practically as flexible as steam. The future of the motor boat industry has depended largely on the production of a gasoline motor that would stand the strain under all conditions and not need constant attention and repairs. This motor, which is soon to awaken public interest, is illustrated by the accompanying half-tone engraving. It is built exclusively for twin-screws, deriving all the benefits in this mode of propulsion. It lies horizontal in the bottom of the boat, which lowers the center of gravity to a minimum, the motor being only from eight to twelve inches in height, according to horse power. There are two opposed pistons in each cylinder, one explosion taking place between them, forcing both outward, revolving both crank shafts at the same time in opposite directions, perfectly equalizing the thrust effect of the connecting rods and absolutely eliminating oscillation. On account of its peculiar and novel construction the motor has attained a speed in revolutions not before known in two cycle types, and weighs less per horse power than any others on the market. A very decided advantage has been achieved in scavenging the cylinders of the burnt gases at every stroke of the motor. The fresh gas is prevented from being forced through the exhaust at every charge of the cylinder, as in the common two cycle type of motor, a new principle being employed whereby these results are easily and successfully accomplished. Cylinder heads are not used on the Van Auken motor, and all the heat units that have heretofore been transferred into the water jacketed heads are utilized in power, acting against the two pistons at each explosion, and greatly increasing the power for the same quantity of fuel used. The cylinders and connecting rods are oiled by mixing one ounce of cylinder oil to each gallon of gasoline placed in the tanks, no other oiling being necessary. It will be of interest to know that this striking innovation in propulsion for small marine construction, an 80 horse power engine, drove a water-mobile speed launch, 40 feet long and 4 feet 6 inches beam, at a constant rate of 26 miles per hour the first time the motor was tried. The motor is made by the Van Auken-Cleavac Company, of Yonkers, N. Y., sole manufacturers of "Cleavac" steam engineering specialties; including pressure regulators, back pressure valves, steam traps, pump governors, safety water columns, damper regulators, return steam traps and automatic air valves. The extent of the industry may be shown in its full measure by the statement that the output comprises automatic valves and devices for all special requirements and uses, and appliances for controlling steam power, pressure and vacuum heating plants. A branch of the business is established at No. 79 Lake Street, Chicago, Ill.

PLASTER BOARD.

A GREAT change in the employment of building materials may be shown by the rapid retirement of lath in favor of plaster board for walls and ceilings. Every one who builds with this timesaving substitute will be readily impressed with the use of Sackett's plaster board over other material. In replacing lath it has the great advantage of being fire-retardant and sound-proof, while it is recommendatory for economy in needing less plaster for finishing, and withal it is clean in application. Its many points of excellence are calculated to give to the trade a very favorable impetus, since it is a substance applicable to buildings of either great or small construction. The boards are made in sheets 32 x 36 inches, and are composed of alternate layers of strong wool felt and plaster. This standard mason's material is on sale in building material yards throughout the country, and the growing demand for it has justified its manufacturers in the

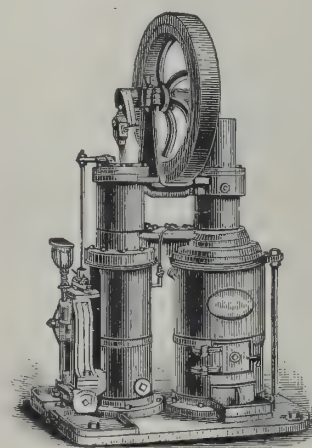
erection of two new and thoroughly equipped plants; Mill No. 1, at Garbutt, N. Y., and Mill No. 2, at Grand Rapids, Mich. Plaster board will not warp, buckle or shrink. It is impossible for walls or ceilings constructed with it to fall, as the perfect adhesion between it and the plastering material makes a solid body that is securely held in place by the nails through the board. Cunard Warfs, East Boston; Rhode Island State Sanitarium, Mount Washington Hotel, Holyoke Public Library, Binghamton State Asylum for Insane, and the Broadway Arcade, are large examples of buildings treated with the plaster board, and numerous hotels, hospitals, churches, schools, theaters, business edifices and residences can be referred to by the manufacturers,

the Sackett Wall Board Company, as proof of the complete efficiency of the comparatively new material, on walls and ceilings. It was first used about twelve years ago. The general office of the company is at No. 17 Battery Place, New York, N. Y.

PUMPING ENGINES.

IN this article we show illustrations of two hot air pumping engines made by the Rider-Ericsson Engine Company, of New York, Chicago, Philadelphia and Boston. This firm is the successor of the Rider Engine Company and the Delamater Iron Works—industries that enjoyed international reputations in building steam engines, steamships, air compressors and many other classes of machinery. The hot air engine has passed through a great many modifications

and improvements, and at present the two forms made, the "Rider" and "Ericsson," have an unsurpassed hold on the markets of the world. The "Rider," shown in the first engraving, is generally used for the larger and heavier work, while the "Ericsson," which is of an entirely different type from the first engine built, and represented by the next engraving, is adapted to both light and heavy uses. A never failing water supply, obtained with absolute safety and

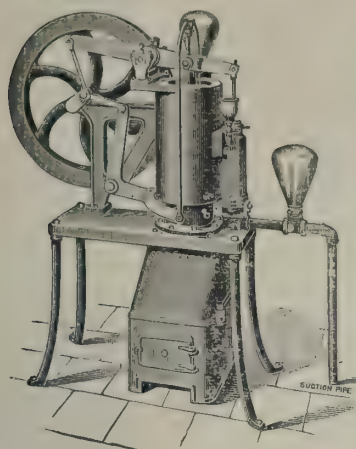


RIDER "HOT AIR" PUMPING ENGINE.

light expense, is positively assured by the employment of these apparatus. They have been built for more than thirty years, and placed in every country, and many of the first years' construction are still in favorable condition for duty. The "Rider" is usually fitted to burn coal. Recent experiments for taking up wear, etc., have greatly increased the durability of both types, and taken altogether, for general use, they are completely satisfactory. The economies gained by the service of engines of this useful caliber are added to by the uselessness of skilled labor for their operation, a boy or woman being equal to the task—a consideration of great importance when it is understood that the machines are largely used on stock farms, in livery and private stables, isolated places, such as country residences, and other places remote from mechanical centers. In use for household purposes the cost is so small that it is scarcely necessary to go into figures, the expenditure of one and a half or two scuttles of coal and a few drops of oil lifting the water supply for twenty families from fifty to seventy-five feet. The housekeeper in a case like this is able in five minutes of spare time to officiate as engineer, stoker and general manager of a pumping department. The great desideratum—a supply of water independent

of the action of the elements—is seen to be reached through the use of these useful little pumping engines, which are being sent easily, constantly and in great numbers to every part of the world. They are built for operation by the employment of the simple coal fire, gas, gasoline or kerosene, the expansion of the air in the closed cylinder caused by the application of heat, generating the power—hence their name, “hot-air” engines. Few mechanisms have changed so little as water pumps. The contrivance to-day, probably is as simple as it ever will be. But when water is to be lifted, the motive

power needed to transcend that furnished by the primitive and uncertain force of wind or animal means, must be of a type commensurate with that started by the mighty inventor of the caloric engine. The works that turn out these superior engines, the durability of which time is yet to determine, is one of the chief glories of our mechanical industries. The inventiveness of its experts, the labor treatment of its materials, are successful in producing an output that bears intimate examination of all their parts from main to underfeatures. Those wishing the practical details of these engines may send for Catalogue “E,” to No. 35 Warren Street, New York, N. Y. Branches of this company are established in Chicago, Philadelphia, Boston, Montreal, Havana, Cuba, and Sydney, N. S. W.



ERICSSON “HOT AIR” PUMPING ENGINE.

A NOVEL FIRE ESCAPE.

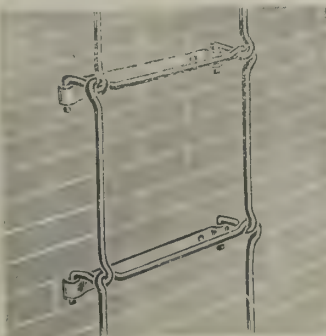
THE new patent fire escape, illustrated in this article, is intended to provide means for the occupants of a building to leave by any window and make their way to the nearest ladder, by which they may descend to the ground. It consists of two rails, the upper one being used as a hand rail and the lower one as a foot rail. These rails are of ordinary one-inch wrought iron pipe, made up in the usual manner with elbows and couplings, which are supported by special brackets, the formation of which is shown in the first illustration. The rails are placed about 3½ or 4 feet apart,



SPECIAL BRACKET.

which is enough to accommodate an average-sized person and at the same time not too great a distance to prevent a small child from reaching the hand rail when standing on the foot rail. The brackets hold the rails 4½ inches from the wall, which, on an average person, brings the rail under the ball of the foot

when the toe touches the building, and leaves a place wide enough for the arm to be put around the hand rail but not so wide that a child's foot would be liable to slip through. These rails are secured to the building as permanent fixtures, and in the time of fire will afford not only means of escape for the people within, but will also be a convenience for the firemen, the hand and foot rails giving a secure hold to their scaling ladders, allowing the firemen to reach any part of the building, for the purpose of accelerating the escape of such persons who are unable or too timid to help themselves, and also to greatly facilitate the work of the fire department in other directions. The specially constructed ladder is made of separate sections, of U form, as may be seen in the second illustration, which are fastened by expansion bolts to the walls, as indicated. In applying the ladders to the building, the top section is first secured, and the remaining sections added one at a time, one beneath the other. The construction is one which gives great strength and rigidity, and can be erected at a comparatively small cost. A building properly equipped



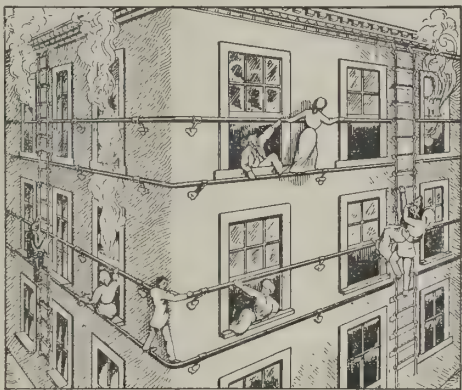
LADDER SECTIONS.

with this fire escape provides a permanent and secure means of egress to the street, and one that can be readily resorted to in an emergency, and the occupants may feel perfectly safe, knowing that a way of escape is within reach. When a building is equipped with the old-fashioned balcony or ladder escape



FULLY EQUIPPED BUILDING.

persons wishing to reach the same might have to pass through halls filled with smoke and possibly fire, or grope through the darkness, as the lighting apparatus may have been destroyed by the fire, and their means of reaching the fire escape thus hampered or



FIRE ESCAPE DURING A CONFLAGRATION.

cut off; but with this escape, all that is necessary to do, is to reach out of the window, grasp the hand rail, place their feet on the foot rail, and move along to the nearest sectional ladder leading direct to the ground. The fire escape is particularly adapted to hotels, hospitals, asylums, convents, school buildings, public institutions, factory buildings, and also private dwellings. The third illustration represents a dwelling completely equipped with the means of escape. The final engraving pictures the apparatus in active use during a conflagration. The escape is manufactured by the Covert Fire Escape Company, of Troy, N. Y.

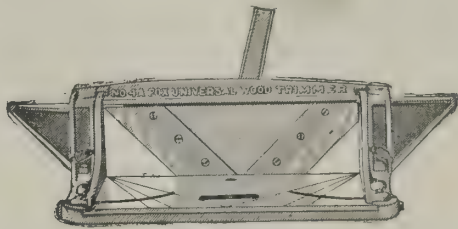
STOVE PIPE RUST.

THE rusting of stove pipes is a matter that is often forcibly brought to the attention of users of anthracite coal stoves. The true cause, points out a recent investigator, is the production of ammonia compounds during combustion. Both the chloride of sal ammoniac and the sulphate are formed in the pipe, and mix with the ashes and soot. It remains harmless during the dry, cold weather, but readily absorbs moisture by contact with damp air as warm weather comes on, when its action begins, and continues so long as the cause remains. The effect of sal ammoniac to induce rusting in iron is well known. Two ways seem to effect its removal from the pipes. First, by immersing and thoroughly soaking the separated sections for several hours in water—running water, if possible; and second, by roasting the pipes over a fire to a red heat.

TOOLS FOR PATTERN SHOP USE.

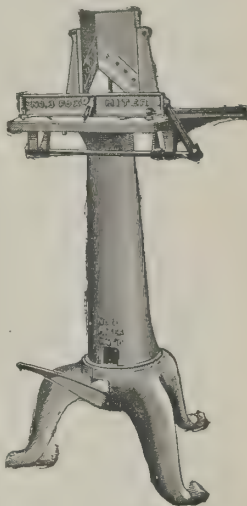
THOSE who wish to be in touch with the equipment needs of a pattern shop could find no better information than that always ready to be furnished by the

Fox Machine Company, Grand Rapids, Mich. Its catalogues demonstrate a full line of general woodworking and machine tools especially put up for pattern shop use. If in the large scope of equipment this firm provides, the needs of an inquirer are not satisfied, he may send in his own specifications. Besides this, all machines are carefully inspected, the power apparatus are given a running test before shipment, and any trimmer, miter or dado will be sent out on approval at any time. “Fox” trimmers will instantly true up any piece of wood accurately and smoothly on any angle. They are made in four styles and ten sizes. Owing to the fact that pattern work requires such an excessive amount of accurate cutting and fitting, the



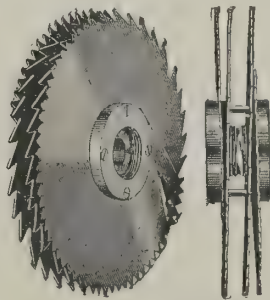
WOOD TRIMMER.

time saved by the use of these tools, which will perfectly trim the ends of a roughly sawed piece of wood, will be readily appreciated. These devices, of which one style is pictured in the accompanying illustration, are also adapted to the economical preparation of interior finish work, and any other branch of woodworking where accurate joints are essential. They are built from the casting to the finished article in the company's plant, complete in every detail and fitted with the most modern machinery, the greater part of which is of special design made by its experts. A popular size miter is No. 3, shown in the second engraving, and it is recommended for use even for the smallest moldings, and when these are small the machine may be furnished with knives and head reversed, in which case the adjustable gage is replaced by a stationary gage. Either the No. 3 or No. 5 machines may be furnished belt driven, and all but the No. 2



MITERING MACHINE.

may be supplied with squaring gages and bedplates when desired. The knives, bed, etc., can be put up specially to give nearly any shape of cut. The next engraving represents an adjustable saw dado or grooving head, which, when expanded, will cut full twice the closed width. It is guaranteed to cut a straight side, flat bottom and smooth groove. There is nothing equal to a saw for cutting a piece of wood in two, and these dados are all saws. The center and outside collars are threaded rights and lefts, so that by turning the screw center the head may be expanded or closed up



ADJUSTABLE SAW DADO.

at will. This is accomplished by means of the hollow wrench furnished with each head, and with which the screw center may be turned ever so little or as much as desired, thus instantly giving just the precise cut required, and not limited to the thickness of certain sections, as in a built-up or sectional head. The firm manufactures milling machines, multiple spindle drills, shapers, punch presses and bicycle tool machinery in addition to the machines described in detail. The latter are tools the company has made a special feature of, and they have been very extensively used for years by woodworkers in general. It would be an unfair consideration of the output of this company not to mention the very difficult matter of making perfect trimmer knives. It is the only firm manufacturing trimmers that is also making knives; in fact, the manufacture of machine knives was only taken up when not able to obtain trimmer and miter knives with the required accuracy and quality. They must be kept sharp to give the best results. Any imperfection in the edge is reproduced in the work. They are not hard to sharpen, and if properly cared for will do accurate service for many years. Always grind on the bevel edge and finish with a fine oil stone. We advise sending for catalogue No. 28 as the best means of securing a complete exposition of the good points of the above-mentioned machine tools.

Index to Scientific American Building Monthly.

VOLUME XXXIX. — JANUARY—JUNE, 1905.

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- III. March: "Bellevue," House of Girard Foster, Esq., Lenox, Mass.
- IV. April: House of Lloyd Bryce, Roslyn, N. Y.
- V. May: "Grayevres," Residence of Ernest Albert, Esq., Rochelle Park, New Rochelle, N. Y.
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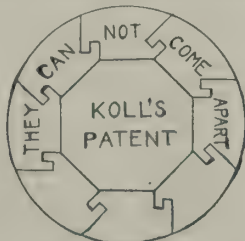
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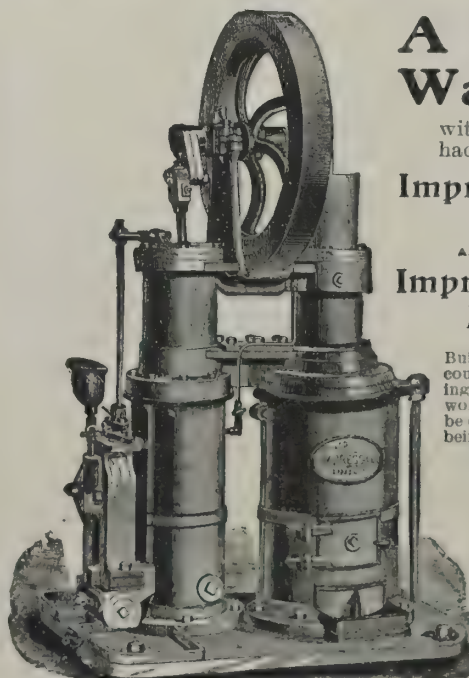
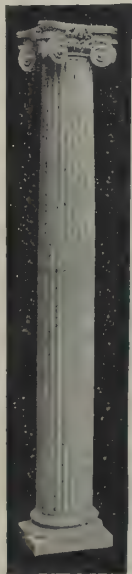


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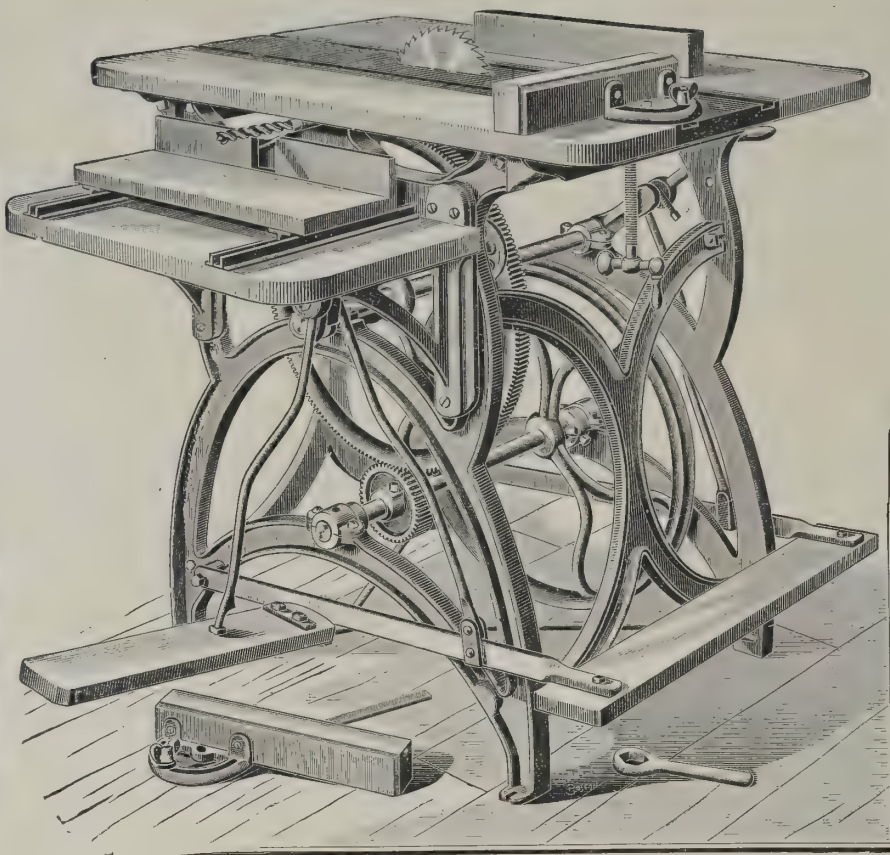
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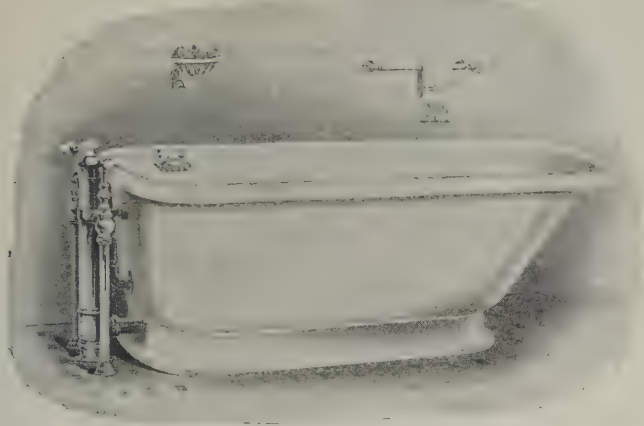


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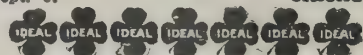
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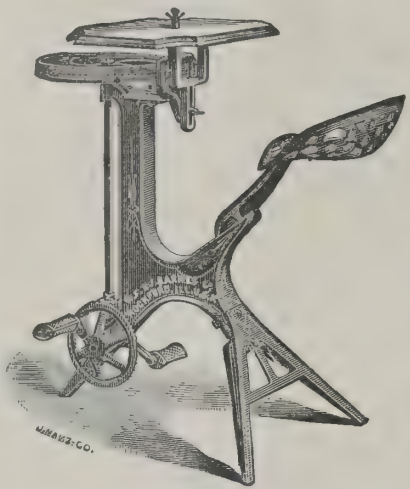
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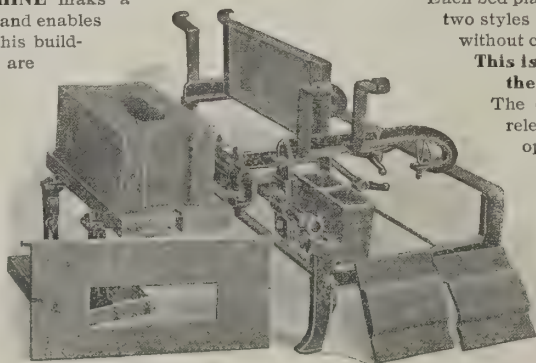
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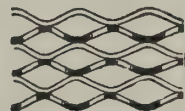
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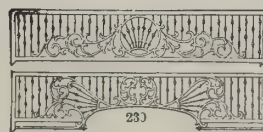
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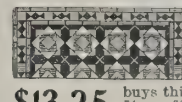
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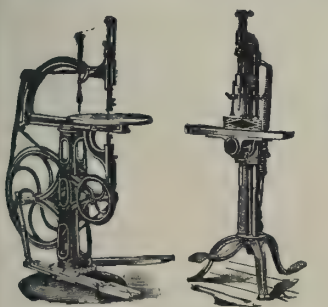
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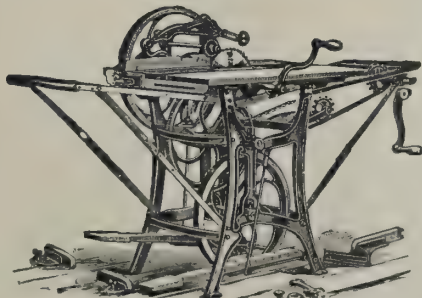
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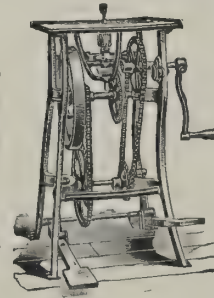
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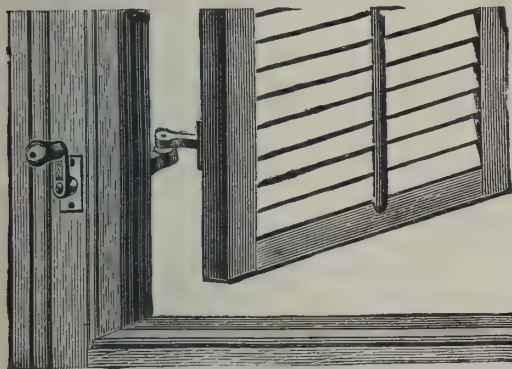
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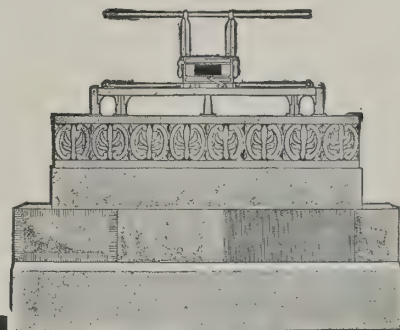
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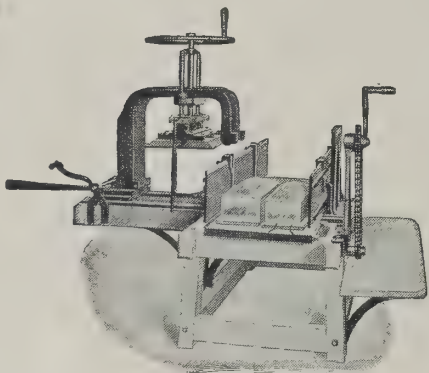
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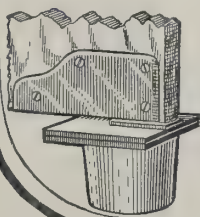
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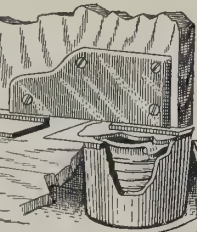


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U. S. Patent, February 13, 1900.
U. S. Patent, November 19, 1901.
Canada Patent, March 19, 1900.
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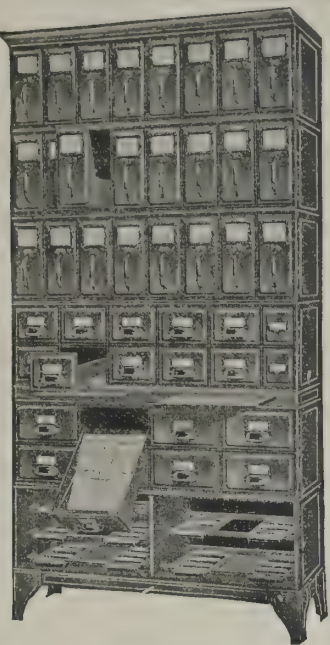
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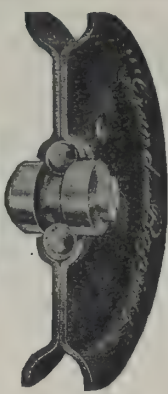
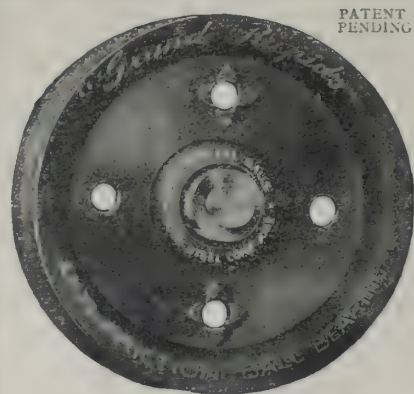
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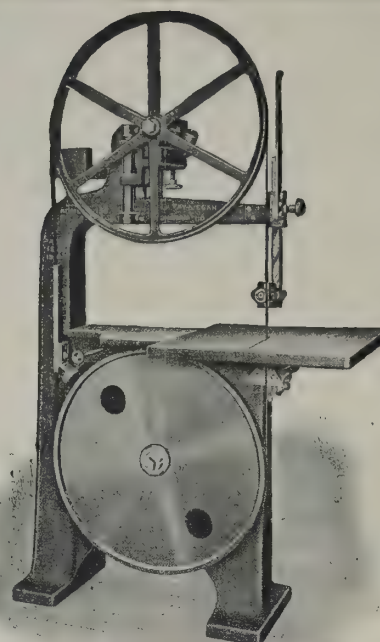
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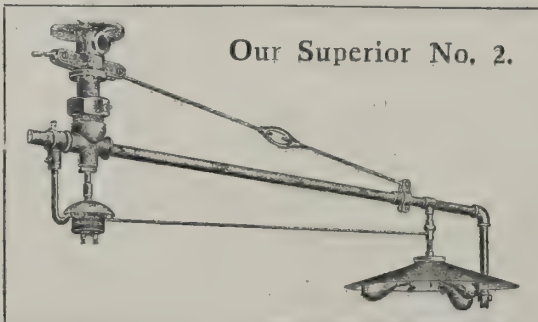
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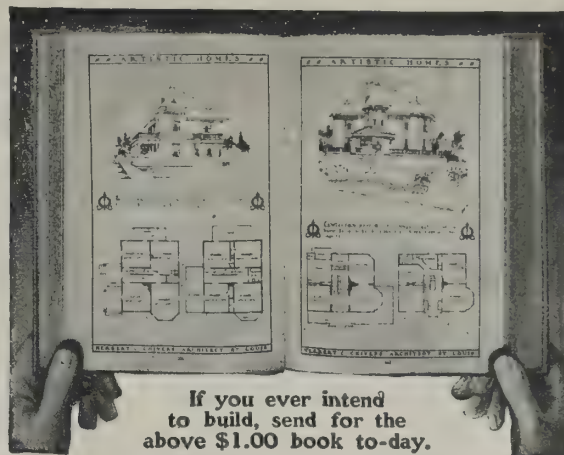
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Requirements of the competition, together with an illustrated book showing the highest types of kitchen cabinets now made, will be mailed free upon a request written on business stationery. The competition will remain open until August 1st, 1905, and designs may be submitted by architects, draughtsmen, furniture designers, etc., residing either in the United States, Canada or Europe.

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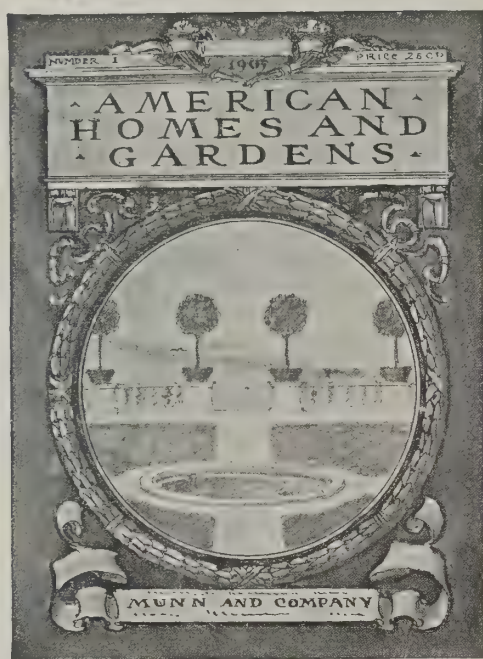
SPECIAL ANNOUNCEMENT

To be published on July 1, 1905: A NEW PUBLICATION

ENTITLED

American Homes and Gardens

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THIS new monthly magazine will be much broader in scope than its predecessor. It will have the word "HOME" for its keynote. The one to whom this word has no meaning will have no interest in this new publication. It is the intention of the Editor to take the reader with him to various parts of the country and show him how the better class of people live, whether the house may have cost \$3,000 or \$300,000. Good taste is, perhaps, more necessary in the building and furnishing of a house of small cost than in a mansion of importance.

The Editor will not leave you on the outer doorstep, however, but will take you within, where you may see how the house is furnished and decorated and how the owners live. Then you may have a walk through the garden, and then to the summer house, where, perhaps, the plan of the formal garden culminates.

There will be published articles on room decoration and furnishing, showing how the furniture may be arranged to produce the best effects, what pictures may be hung, and what bric-a-brac, inherited from some former mansion, may with advantage be discarded. In short, the new publication is intended to be

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The new publication will be issued monthly, and will be somewhat smaller in page size than the "Building Monthly," viz.: 10½ x 14. It will have a handsome colored cover. It will have about 50 pages each issue. Price, 25 cents each issue; \$3 a year.

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To any one subscribing before July 1, 1905, the subscription price will be \$2.50 for "American Homes and Gardens" for one year from July 1, 1905, to July 1, 1906, and the subscriber will receive free of charge the "Scientific American Building Monthly" for June.

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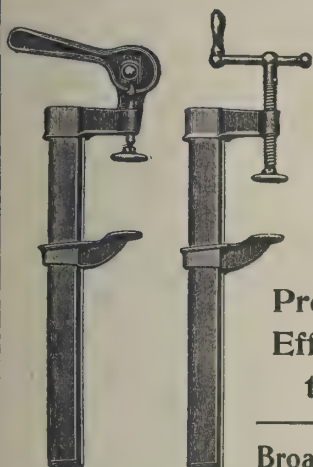
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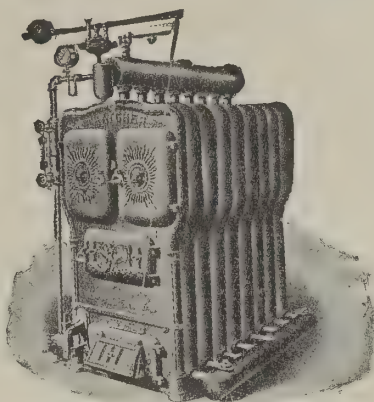
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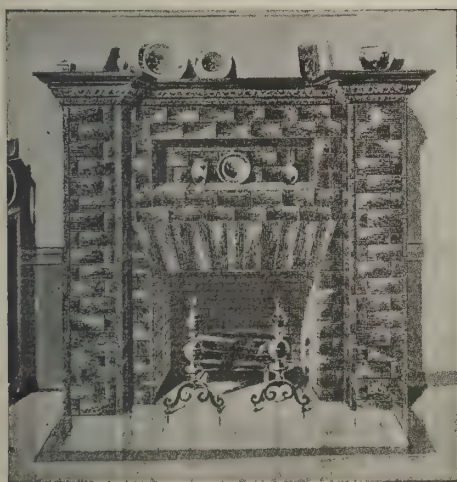


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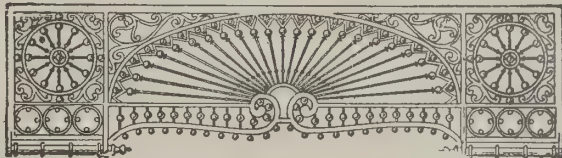
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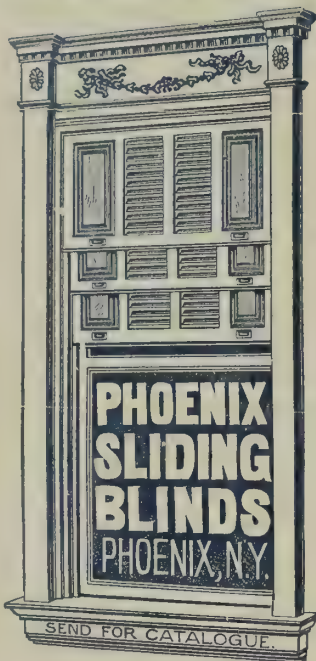
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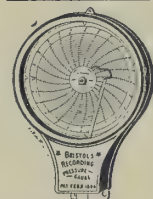


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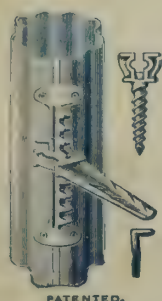
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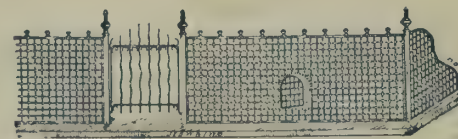


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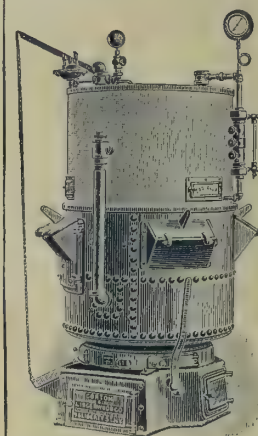
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